```
                          1         10        20        30        40
QUERY                     V P R E V E H F S R Y S P S P L S M K Q L L D F G S C E R T S F A F L R Q E L P
UniRef90_F7DBD1           A P K Q I E R F S R F S P S P L S M K Q F I D F G S C E K T S F A F L R Q E L P
UniRef90_Q63ZR8             T S Q V D E H F S K F S P S P L S M K Q F L D F G S C E K T S F I F L R H E L P
UniRef90_G1KPJ4           A T R E V E H F A R Y S P S P L S I K Q F L D F G S C E K T S F S F L R H E L P
UniRef90_F1Q8X6           A P K H I D Y Y A K F S P S P L S M K Q F L D F G T C E K T S F A F L R Q E L P
UniRef90_L7M628           I G K M L D K Y S R F H P S P L S I K Q F I D F G E C E K T S F L M F L R K E L P
UniRef90_V9KFF3           V P R H I D H F S K F S P S P L S I K Q F L D F G S C E K T S F M F L R Q E L P
UniRef90_W5LQT5           V P K H V D H F S K F S P S P L S M K Q F L D F G S C E K T S F K F L R Q E L P
UniRef90_S4S001           L P R Q L E H Y S K F S P S P L S I K Q F I D F G S C E R T S Y V F L R Q E L P
UniRef90_W5MYK1           V P K Q I E R F C K Y S P S P L S M K Q F L D F G S C E K T S F V F L R Q E L P
UniRef90_V9LFQ4           L A G Q L E H F S K F S P S P L S M K Q F L D F G S C E K T S F A F L R Q E L P
UniRef90_B5DGI3           V T S K I E Y Y S R F S P S P M S I K Q F L D F G R C E K T S Y V F L R K E L A
UniRef90_T1KHA9           I V K S L D Y Y S K F N P S P L S I K Q L L D F G R C E K R S F V F L R K E L P
UniRef90_F6ZTN0           V P S Q I E Y Y S K F S P S P L S I K Q F L D F G R C E K T S Y L F L R K E L P
UniRef90_UPI0003C2AEDF      R E V E R F A R F S P S P L S M Q Q F L D F G S C E R T S F A F L R Q E L P
UniRef90_UPI00038F0473    A P K Y I E H F S K F S P S P L S M K Q F L D F G S C E K T S F T F L R Q E L P
UniRef90_G3QND6           V P G Q V D F Y A R F S P S P L S M K Q F L D F G S C E K T S F M F L R Q E L P
UniRef90_H2V801           A G K D I D Y Y S K F S P S P L S M K Q F L D F G S C E K T S F A F L R Q E L P
UniRef90_S4R7B5           I P R H I D H F S K F S P S P L S M K Q F M S E N A C E K T S F T F L R H E L P
UniRef90_E0W1B8           L T K L L D F Y S Q F T P T P L S I K H F L D F G A C E R K S F L F L R Q E L P
UniRef90_J9K332             K M V D F Y S Q F N P S S L S I K Q F I D F G A N E Q K S Y Q F L K K E L P
UniRef90_C3ZGW2           L P A L V D H Y S R F S P S P L S I Q Q F L D F G S C E K K S F T F L R Q E L P
UniRef90_E9GCN1           L S R M L D H Y S H F N P S P L S V K Q F I D F G R S E V R S F A F L R K E I P
UniRef90_D6WRE8           I A K M L D F Y S Q F N P S P L S I K K F I D F G A S E Q K S F I F L R Q E L P
UniRef90_K4DHR6           L A E E V K E W G S M K Q T G V S L K Q M M N F G K N L L I S A Q F V H K E L P
UniRef90_K4AVT4           L I E E V H R W G S M K Q T G V S L K Y M M E F G S K P L I S S Q F L H K E L P
UniRef90_UPI0003959A01                                                C E R T S F A F L R Q E L P
UniRef90_W4XVB9             Q M E Y Y S K F S P S P L S I K Q F M D F G Q S K A K S F V F L R Q E L P
UniRef90_B9HXA2             E E V Q R W G C M K Q T G V S L R Y M M E F G R N L L I A A Q F L H K E L P
UniRef90_M0RU21           L A E E V Q R W G A M K Q N G V S L R Y M M E F G K N L L L S A Q F L H K E L P
UniRef90_D7UA98             E V E K W G G R K Q T G V S L R Y M T K F G S Q P T S S A Q F L H K E L P
UniRef90_S8CTQ0           L M E E V H K W G A M K Q N G V S L R Y M M E F G R N L L I S A Q F L H K E L P
UniRef90_Q6PP99           L I E E V N R W G C L K Q T G V S L R Y M M E F G S K P L I S A Q F L H K E L A
UniRef90_UPI000265719E      K L I D H Y S K F N P S P L S I K Q F L D F G E R P A E S F A F L R K E V P
UniRef90_U5EZ53           I T K M L D F Y S Q F N P S P L S I K Q F I D F G A C E G K S F I F L R K E L P
UniRef90_Q8X073           L M D T I R H Y A S F P A T G V S L R Q M V Q F G E K P S T A S Q F L A E E L P
UniRef90_A9TEA5           V L E D I Y R Y S F M K Q T G V S L K Y M M D F G R N L L L S S Q F L H N E L P
UniRef90_K7FH82             P L V I E R Y S V Y S P K P V C C N R I L Y F N A C E K T S Y M F L R K E L P
UniRef90_W1NWH9           L I E E V Q R W S E M K Q T G V S L K Y M M D F G S R P T Q A A Q F L H K E L A
UniRef90_A0A059B6V6               H R W G G L K Q T G V S L R Y M M E F G S R P L I S A Q F L H K E L P
UniRef90_UPI00046B0D26                  P A R M G G G G S D N A C E R T S F A F L R Q E L P
UniRef90_Q2UEW3           L M E T I R H Y A S F P A T G V S L R Q M V Q F G D R P S T A S Q F L S E E L P
UniRef90_A8I367           L I E D V H K W G C F K Q T G V S L R Y M M E F G S K P S D S A Q F L H K E L A
UniRef90_P91622             K M L D F Y S G F N P S P L S I K Q F M D F G G Q C E K K S Y I F L R K E L P
UniRef90_Q00ZQ2           V V D D I Y R G S F R S Q T G V S L K Y M M D F G A Q P I H S A Q F L R N E L P
UniRef90_S4RD11             Q V E F Y S R F S P S P L S I K Q F L D F G A C E R T S F I F L R Q E L P
UniRef90_A8I520             D I F A H A L K K Q T G V S L K Y M L D F G Q N P L L S A Q F L H K E L P
UniRef90_E1ZME9           V V D D I F A C A L K K Q T G V S L K Y M L D F G S K P I E S A Q F L H N E L P
UniRef90_V4AZD6             M L D H Y S Q Y N P M P L S M K N F I D F G N C Q E A S F Q F L R K E L P
UniRef90_D8RGP6           L V D D I Y K C S N M K Q T G V S L K Y M M D F G S L L L S S Q F L H K E L P
UniRef90_W5EKW8           V A E E V A R W G G M R Q T G V S L R Y M T E F G R N L L L S A Q F L H K E L P
UniRef90_H2ZZH4                                                      C E K T S F V F L R Q E L P
UniRef90_UPI00038381E8    V P H H I E H F S K F S P S P L S M K Q F L D F G S C E K T S F V F L R Q E L P
UniRef90_B7QK03                                                       C E R T S F V F L R K E L P
UniRef90_C7YZN9           L M D T I R H Y A R F P A T G V S L R Q M V Q F G E K P S R A S Q F L A E E L P
UniRef90_K7F7F5                    P L S L G S         S N A C E K T S F A F L R Q E L P
UniRef90_U9T1A8             E K I K H F A R F P Q T G V S L R Q M V M F G Q N P L K A T Q F L A D E L P
UniRef90_I1MRY3             M K E V K I W G C L K Q T G V S L R Y M M E F G S N P T Q S A Q F L H K E L P
UniRef90_UPI0003AB7916    V P G Q V D F Y A R F S P S P L S M K Q F L D F G S C E K T S F M F L R Q E L P
UniRef90_F1QLF7                  K F L R S P V L L S G         S A N A C E K T S F M F L R Q E L P
UniRef90_L8G6I8               L D E W V A K E A R P I S L R Q L M V F G R S L L S S A N Y V R T E L P
UniRef90_K0L070           I K N Q I A K W A K I P P R G I S L K E M V Q V Q H P S N A S K F I V R E L P
UniRef90_F6YFP0             Q M I E Y Y S R F S P S P L S I K R Q F L D F A Q K E K T S F S W L R Q E L P
UniRef90_I1QET7           V A E E V G R W G S M K Q T G V S L R Y M M E F G S R P L L S A Q F L Q K E L P
UniRef90_I1PBM6                    W G G M R Q T G V T L R Y M M E F G R N L L R S A Q F L R R E L P
UniRef90_B2W727           L M D T I K H Y S N F P A T G V S L R Q M V Q F G E K P S T A S Q F L S E E L P
UniRef90_C1MI13           L V E N I Y R S S F K N Q T G V S L K Y M L D F G S Q P I H S A Q F L H K E L P
UniRef90_G3X8J2                                                       C E K T S F M F L R Q E L P
UniRef90_UPI00046B4000    V P K Q I E R Y S R F S P S P L S I K Q F L D F G R C E K T S Y M F L R K E L P
UniRef90_B6QFJ9               L D E W V E R T V R P I S L R Q L T F F G R R L L S S A N Y V R T E L P
UniRef90_UPI0004560185       K V L E T W A A R P A T R M T L Q L I F G K T L L K S A A Y V R Q E L P
UniRef90_V8PGR8           A P K Y I E H F S K F S P S P L S M K Q F L D F G S C E K T S F I F L R Q E L P
UniRef90_T1FZT5           A G K A I D Y Y G R Y H P S V L S I Q Q F I D F S K S S K Q S F L F L R K E I P
UniRef90_K1RCH3                       Y R P S P M S L S E L L H F G K C E R K S F Q F L N D E I P
UniRef90_T2MDG7           V Q K Y I N R Y S R Y H Q S I L T I E Q F T H F G K N P L G S Y K F L R N E V P
UniRef90_W3X8N9               D V A N L S N Q H Q H S L S L A D L V K H G R P P L S S A N F T L S L L P
UniRef90_S7ZWU1             R E V A Q L A A L P L H P L T L S D L V R F G K P P L S S A S F T L R V L P
UniRef90_R7YP20             D I R E L A A K F L T L G D L V K H G R P P L S S A N F T L S I L P
UniRef90_U1GF01             E I N R L A T R P R R P V T L A D L V K H G R P P L S S A N Y T L A L L P
UniRef90_S8B4A2             D V A Q L A A S P R R P L T L A D L L R H G R P P L S S A N F T L N L L P
UniRef90_A7S223           I S K L I Q R Y S R Y Q Q S C L S I E Q Y T T F G K K P V D S Y R F G K H E L P
UniRef90_M2W6H4             E Q V K A F A S R K P S V T L K R L F E F G K K L L T A A Q L L H R E L P
UniRef90_F2SQS7             E I T R L S T S P R R P L T L A D L V R H G R P P L T S A N F T L S L L P
UniRef90_UPI000234E1B4    V A E E V G R W G S M K Q T G V S L R Y M M E F G R N L L L S A Q F L H K E L P
UniRef90_T1JG39           V G K L L L D H Y S N Y N P S P L S I K Q F I D F G Q C E R Q S F L F L R K E I P
UniRef90_W2S526             E V N R L S A K P R R P L T L A D L V K H G K P P L S S A N F T L A L L P
UniRef90_C1LEL6             G E H F V R F G G Y S P T P L L K K L I A F G K S L Q K S A S F L A D E L P
UniRef90_R7UJU1           M P K I L D R Y S Q Y H P S V L T I Q K F I D F S T S S Q K S F L F L R K E I P
UniRef90_M3D9W5             D I G R L A A K P L H P L T L A D L C K N G R P P L S N A N F T L D I L P
UniRef90_C7ZPL5             E I A T L A R Q H Q H P L S L A D L V R H G R P P L S S A N F A L S L L P
UniRef90_W4ZAI3             I D V A A K K P S V R L T P A T L L Y T A S Q F L R H E L P
UniRef90_L8HFP7             M I H R Y A N L K Q T P V S V K N M I V F G K T L L R S H A F L R Y E L P
```

```
                                        50              60              70              80
QUERY                  V R L A N I L K E I D I L P T Q L V N T S S V Q L V K S W Y I Q S L M D L V E F
UniRef90_F7DBD1        V R L A N I M R E L Y I L P D Q L L G T P S V Q L V Q S W Y I Q S L M E L I E F
UniRef90_Q63ZR8        V R L A N I M K E I N L L P D N L L K M P S I R L V Q S W Y V Q S F Q E I I D F
UniRef90_G1KPJ4        V R L A N I L K E I D L L P S P L L S T P S V K L V K S W Y Q S L M E L V E F
UniRef90_F1Q8X6        V R M S N S L K E I S L L P D Q L I E T Q S V Q L H S W F V Q S L M D I L E F
UniRef90_L7M628        V R L A N I M K E I H L L P E N L L S M P S V E L V R S W Y E R S F E E I L E F
UniRef90_V9KFF3        V R L S N I M K E I N L L P D R L L S T P S V Q L V Q S W Y I Q S L L D I L E F
UniRef90_W5LQT5        V R L A N I M K E I R L L P P R L L S T P S A Q L V H S W Y V Q S L M E L L D F
UniRef90_S4S001        V R L A N I M K E I N L L P D N L L S T P S V Q L V Q S W Y V Q S F M D I L K Y
UniRef90_W5MYK1        V R L A N I M K E I D F L P D K L L S T P S L Q L L T S W Y A Q S F M E I L Q F
UniRef90_V9LFQ4        V R L S N I M K E I N L L P D N L L S T P S V K L V Q S W Y V Q S L M D I L E F
UniRef90_B5DGI3        V R G A N T M K E I N L L P S D L R T Q P S V K L V H S W Y I Q S F E E L L N Y
UniRef90_T1KHA9        V R L A N I M Q E I N L L P D N L L R M P S V T L V R S W Y E R S F S E I L D F
UniRef90_F6ZTN0        V R I A N S L K E V N L L P E S L L Q R P S V K L V R S W Y L Q S F L E L L E Y
UniRef90_UPI0003C2AEDF V R L A N I L K E I D L L P V Q L Q S T P S V T L V K S W Y M Q S L M D L V E F
UniRef90_UPI00038F0473 V R L A N I M K E I N L L P D R V L S T P S V Q L V Q S W Y V Q S L L D I M E F
UniRef90_G3QND6        V R L A N I M K E I S L L P D N L L R T P S V Q L V Q S W Y I Q S L Q E L L D F
UniRef90_H2V801        V R L A N I M K E I N L L P D N L L R T P S V R L V Q S W Y M Q S F Q D I L E F
UniRef90_S4R7B5        V R L [C]N I M K E I N L L P D K L L Q T P S V R L V Q S W Y N Q S L L D M L D Y
UniRef90_E0W1B8        V R L S N I M K E I H L L P Q N L L K M P S V A L V N E W Y A Q S F E E I L E F
UniRef90_J9K332        V R L A N I M K E I H L L P D N L L K M P S V N L V N N W Y A Q S F N E M I E F
UniRef90_C3ZGW2        V R L A N I M K E I N L L P D T L L K M P S V E L V Q S W Y I Q S L T E I L H F
UniRef90_E9GCN1        V R L A N I M Q E I N L L P Q N L L R M P S V H L V H N W Y V K S F K E I L E F
UniRef90_D6WRE8        V R L A N I M K E I A L L P E N L L R M P S V V A V N D W Y I R S F Q E I I E F
UniRef90_K4DHR6        I R I A R R V I E L E N L P Y G L S T Q N A V L Q V R D W Y L D S F R D L R S Y
UniRef90_K4AVT4        M R I A R R V I D L Q T L P Y G L S L K P A V L K V R D W Y L D S F R D L R S F
UniRef90_UPI0003959A01 V R F A N I L K E I D L L P D K L L S T P S V K L V R S W Y I Q S L K E L I E F
UniRef90_W4XVB9        V R I A N I M K E I L P E K L L Q M P S V R M V Q G W Y Q Q T F E E L L E Y
UniRef90_B9HXA2        I R I A R R A I E L E T L P Y G L S E K P A V L K V R D W Y L E S F R D M R S F
UniRef90_M0RU21        V R I A R R A I E L E S L P F G L S Q K P A V L K V R D W Y L E S F R D I R S F
UniRef90_D7UA98        I R I A R R T L E L Q S L P F G L S Q K P A V L K V R D W Y L E S F H D I R S F
UniRef90_S8CTQ0        I R I A R R A I E L D S L P Y G L S D K S A V L K V K N W Y L E S F R E L R A F
UniRef90_Q6PP99        I R I A R R A V E L E N L P Y G L S Q K P A V L K V R D W Y V D S F R D V R A F
UniRef90_UPI000265719E V R L A N I M K E I E L L P P Q L L K M P S V R L V T S W Y Q R S F M E I A E F
UniRef90_U5EZ53        V R L A N I M K E I T L L P D S L L R M P S V G M V S A W Y A K S F E E V I A F
UniRef90_Q8X073        I R L A H R V I E L D N L P D G L N E M P S V K K V Q A V A Q S F E M V D D T
UniRef90_A9TEA5        V R L A H R V A E L E N L P H G L S S K A P V L K V R D W Y V D S F T D L R S F
UniRef90_K7FH82        V R L A N T M R E V N L L P D N L L N R P S V G L V Q S W Y M Q S F L E L L E Y
UniRef90_W1NWH9        I R I A H R A Q E L E N L P Y G L S E K P A I L K V R D W Y L D S F R D L R M F
UniRef90_A0A059B6V6    I R I A R R A I E L E N L P Y G L S E K P A V L K V R D W Y L D S F R D V R A F
UniRef90_UPI00046B0D26 V R L A N I L K E I D I L P D R L V N T S S V K L V K S W Y I Q S L M D L V E F
UniRef90_Q2UEW3        I R L A H R V Q D L G E L P D G L S E M P S I K K V Q D W Y A Q S F E I L D D Q
UniRef90_A8I367        I R I A R R A I E L E N L P [C]G L S H K P A I L K V R D W Y W D S F R D I R S F
UniRef90_P91622        V R L A N I M K E I A L L P D N L L H T R S V S E V S S W Y V K S F E D V L V Y
UniRef90_Q00ZQ2        V R L A H R V A E L E N L P F G L S D M S Q V L D V R D W Y V E S F R E L R S F
UniRef90_S4RD11        V R L A N T M K E I N L L P D K L L H T P S V G L V Q S W Y A K S M T E I L G Y
UniRef90_A8I520        V R L A H R V A E L E N L P Y G L S A K K H I L Q V R D W Y V E S F R D L R S F
UniRef90_E1ZME9        V R L S H R V A E L E N L P Y G L S A K P H V L K V R D W Y V E S F R E L R G F
UniRef90_V4AZD6        V R M A N I M K E I K L L P D H L L T M P S V R L V M S W Y E Q S F R E L I Q F
UniRef90_D8RGP6        V R L A H R V M E L D N L P Y G L S E K A P V L K V R D W Y L D S F K D L R T F
UniRef90_W5EKW8        I R I A R R A L D L D S L P F G L S H K P A V L K V R D W Y L D S F R D I R Y F
UniRef90_H2ZZH4        V R L A N I M K E I N I L P D K L L S T P S V Q L V Q S W Y A Q S L M E M I Q F
UniRef90_UPI00038381E8 V R L S N I M K E I N L L P K R L L T T P S V Q M V H S W Y I Q S L M E I L E F
UniRef90_B7QK03        V R L A N I M K E I H L L P E N L L Q M P S V E L V K S W Y E R S F E E I L E F
UniRef90_C7YZN9        I R L A H R V Q E L D E L P D G L N E M P S V I K V K D W Y A Q S F E A F R L P
UniRef90_K7F7F5        V R L A N I M K E I N L L P D R V L S T P S V Q L V Q S W Y V Q S L L D I M E F
UniRef90_U9T1A8        I R I A R R A I E L D L H S L P H G L S H M P P V L K V R H W Y L D S F R E I I S F
UniRef90_I1MRY3        I R I A R R A I E L H S L P H G L S H M P P V L K V R H W Y L D S F R E I I S F
UniRef90_UPI0003AB7916 V R L A N I M K E I S L L P D N L L R T P S V Q L V Q S
UniRef90_F1QLF7        V R L A N I M K E I D F L P D K L L G T P S L K L L Q S W Y A Q S L M E L V D F
UniRef90_L8G6I8        V R L A H R I R D M Q T L P Y V V V S N H H I S E V Y E L Y Y Q A F E N L R R I
UniRef90_K0L070        I R L A H R I D E L E N L P N G L N K M Q S I E K V K D W Y T Q S F D D L L Q I
UniRef90_F6YFP0        T R L A N M V K E M N R L P D E L L V V S T K L V T S W Y N T S F E E V I D F
UniRef90_I1QET7        I R I A R R A L E L E S L P F G L S R K P S V N K V R D W Y L D S F R D I R Y F
UniRef90_I1PBM6        I R I A R R A L D L D S L P F G L S T K P A I L K V R D W Y L D S F R D L R [C]F
UniRef90_B2W727        I R L A H R V Q E L N D L P D G L N E M P S I [C]R V R D W Y A Q S F E A A D D G
UniRef90_C1MI13        V R F A H R V A E L E N L P L G L S S K A Q V Q T V R D W Y V E S Y D E L L K F
UniRef90_G3X8J2        V R L A N I M K E I S L L P D N L L R T P S V Q L V Q S W Y V Q S L Q E I L D F
UniRef90_UPI00046B4000 V R L A N T M R E V N L L P D N L L N R P S V G L V Q S
UniRef90_B6QFJ9        T R L A H R E M Q T L P Y V V V A N P H I S L V Y E L Y Y R A F D R F R T I
UniRef90_UPI0004560185 V R I A H R I R D L Q A L P F V V M T N Q H L E N Y N K Y W S A F E T L R R L
UniRef90_V8PGR8        V R L A N I M K E I N L L P D R V L S T P S V Q L V Q S W
UniRef90_T1FZT5        V R L A N I M K E I Q L L P D K L L E M P S V K I V K G W Y E Q S F E D I L E F
UniRef90_K1RCH3        I R L A H I M R E F E D L P K E L L T M K S V K L V R S W Y D L S F K E V Q A F
UniRef90_T2MDG7        V R L A H I M Q E I S H L P K N L L S M R S V D L V R S W Y Q S F I D L M E F
UniRef90_W3X8N9        I R L A H R I Q A L R N L P F I V V S N P N I S K I Y N N Y L H S L S T L L P W
UniRef90_S7ZWU1        I R L A R R I I S L R N L P Y I V V S N P H I S Q I Y N N Y L H S L R L L L S F
UniRef90_R7YP20        T R L A H R I Q S L R N L P Y I V V S N P H V S K I Y N N Y I H S L S T L L P W
UniRef90_U1GF01        P R L A H R I Q Q [C]L R N L P F I V V S N P H I S Q I Y N N Y L H S I S T L L P Y
UniRef90_S8B4A2        A R L A S R I Q A L R N L P F L V V S N P H V S K I Y H N Y Q H S I S T L L P Y
UniRef90_A7S223        V R L A H I I R E I D L L P K N L L R M P S V E L V R S W Y V Q S F S E L L E F
UniRef90_M2W6H4        [C]R L A R R V I Q L A S L P Y G L S D M P S V K V V K D M Y E R S F I D M I Q F
UniRef90_F2SQS7        A R L A [C]I Q A L R N L P F I V V S N P H I S Q I Y N N Y L H S F T T L L P F
UniRef90_UPI000234E1B4 I R I A R R A L E L D S L P F G L S A K P A L L K V R D W Y L D S F R D I R Y F
UniRef90_T1JG39        V R L A N I M K E I N L Y V Q S F D E I L E F
UniRef90_W2S526        A R L A H R I T A L R N L P F I V V S N K I Y N N Y L H S L S T L L P F
UniRef90_C1LEL6        V R L A N I M K E I H L L P E R L V R T P S A S L V R R W Y E Q S F [C]E L M D F
UniRef90_R7UJU1        V R L A N I M K E I H L L P E Q L L M P S V R V E G W Y I Q S F Q D I L Q F
UniRef90_M3D9W5        S R L A H R I Q S L R S L P Y I V V A N P H I S K I H Q N Y I H S L S T L L P Y
UniRef90_C7ZPL5        V R L A H R I Q A L R N L P Y I V V A N P N I S R I Y N N Y L H S L S I L L P Y
UniRef90_W4ZAI3        V R V A H R I A E F R G L P F L V G [C]N P T I L H V H E L Y I R A F H L L S E F
UniRef90_L8HFP7        I R L A H I A K E I T A L P E E L L E V E P V Q K V L N W Y R L S F E V I E S
```

```
                              90            100           110           120
QUERY                H E K S P D D Q K A L S D F V D T L I K V R N R H H N V V P T M A Q G I I E Y K
UniRef90_F7DBD1      V E R N P E D Q R V L S D F T E A L V T I R N R H N N V V P T M A Q G V I E Y K
UniRef90_Q63ZR8      K D T N T E D P N T V R K F S D T V I T I R N R H N D V I P T M A Q G V V E Y K
UniRef90_G1KPJ4      H D K K S D D H V L S D F I D A L I K V R N R H N D V V P T M A Q G V L E Y R
UniRef90_F1Q8X6      Q D K C P D D P R V L A E F V E T L V T I R N R H N D V V P T M A Q G V I E Y R
UniRef90_L7M628      E N A G S D D Q K A M T K F C E A L I K I R N R H S N V V Q T M A Q G V I E L K
UniRef90_V9KFF3      Y T K N A D D H T V L S G F T D A L I T I R N R H N D V V P T M A Q G V I E Y K
UniRef90_W5LQT5      L D K S P E D H V V L Q D F V E A L V A I R N R H N D V V P T M A Q G V I E Y K
UniRef90_S4S001      E G K D P E S   D V L S G F M E T L V N I R N R H N D V V P T V A Q G V I E Y K
UniRef90_W5MYK1      Q E K D P E D R K V L S D F S E V L I N I R N R H N N V V P T M A Q G V I E Y K
UniRef90_V9LFQ4      L D K N P E D H R V L S D A L I N I R N R H N N V V P T M A Q G V V E Y K
UniRef90_B5DGI3      E H R G P E D S R T L N D F L D T L V K I R N R H N E V V P T M A Q G V I E Y K
UniRef90_T1KHA9      E S A T E S D A K I L E T F C E T L I R I R N R H N T V V Q T M A Q G V L E M K
UniRef90_F6ZTN0      E N K S P E D S D V L Y D F L N V L I Q V R N R H N D V V P T M A Q G V I E Y K
UniRef90_UPI0003C2AEDF H Q K S P D D Q K V L S D F I D S L V T V R N R H N N V V P T M A Q G I I E Y K
UniRef90_UPI00038F0473 L D K D P E D H R T L N H F I D A L V T I R N R H N D V V P T M A Q G V I E Y K
UniRef90_G3QND6      K D K S A E D M A C K M I F T D T V I R I R N R H N D V I P T M A Q G V I E Y K
UniRef90_H2V801      R D R N A E D E K V T H E F T N A V I K I R N R H N D V I P T M A Q G V V E Y K
UniRef90_S4R7B5      E R K D P E E D A T L N I F V E T L I K I R N R H N D V V P T M A Q G V I E Y K
UniRef90_E0W1B8      E K S D I N D   K V L N R F C E S L V R I R N R H Y D T V Q T M A Q G V L E L K
UniRef90_J9K332      E V D D G C T E Q T L N K F C Q I L V K I R N R H S D V V Q T M A Q G V I E L K
UniRef90_C3ZGW2      E N K S P S D S A I I E N F T E T L Y N I R K R H S N V V E T M A Q G V I E L R
UniRef90_E9GCN1      E D I K S V D N R K L N E F C E A L I K I R N R H A D V V P T M A K G V I E L K
UniRef90_D6WRE8      E K K E I   N H D T L N Y F C D S L V K I R N R H A D V V E T M A Q G V L E L K
UniRef90_K4DHR6      P     E I K D K N D E L K F T Q M V K M I K V R H N N V V P M M A L G V K Q L K
UniRef90_K4AVT4      P     D I K D E N D E L E F T K M I N L V K V R H N N V V P M M A L G V Q Q L K
UniRef90_UPI0003959A01 H Q K S P D D Q K V L S D F I D T L I R V R N R H H D V V P T M A Q G V I E Y K
UniRef90_W4XVB9      V E K T E E E P V L L R Y I N Q L T T I R N R H V N V V E T M A Q G I L E M R
UniRef90_B9HXA2      P E I K G T N D E K E   F T Q M I K A I K V R H N N V V P M M A L G V Q Q L K
UniRef90_M0RU21      P     D V K D S N D E L A F T Q M I K M I K V R H N N V V P A M A L G V Q Q L K
UniRef90_D7UA98      P     E V K D T N D E L G F T N M I K M I K V R H N N V V P M M A L G V Q Q L K
UniRef90_S8CTQ0      P H     I K D N C D E L Y F T E M I T K I K V R H N N V V P M M A L G V Q Q L K
UniRef90_Q6PP99      P D I K N V N D E R E   F T E M I K A I K V R H N N V V P T M A M G V Q Q L K
UniRef90_UPI000265719E L H K G T P T D S V L S D F T D T L T R V R N R H N T V V Q T M A E G V L E L K
UniRef90_U5EZ53      E K V E P T T N N   L E H F C K E L I K I R D R H S D V V Q T M A Q G I L E L K
UniRef90_Q8X073      G D W P P D L H L Y N Q K F A Q T L H K I K R R H D S V V T T M A Q G I L E Y K
UniRef90_A9TEA5      P     E I Q N V G D V A R F T N L I T R V K M R H N D V M P T M A M G I Q Q L K
UniRef90_K7FH82      E N K S P E D P H I L D N F L D V L I K V R N R H N D V V P T M A Q G V I E Y K
UniRef90_W1NWH9          S E I K D S E D E I A F T Q M I N R I K V R H N N V V P A M A L G V Q Q L K
UniRef90_A0A059B6V6  P     D I K D A T D E R D F T Q M I K A V K V R H N N V V P M M A L G V Q Q L K
UniRef90_UPI00046B0D26 H E K S P D D Q K A L S D F V D T L V K V R N R H H N V V P T M A Q G I I E Y K
UniRef90_Q2UEW3      G N W P P E L N D Y N E R F A K T L Q H I K R R H D S V V T T V A Q G I L E W K
UniRef90_A8I367         S E I K N M N D E K E F T E V I K A I K V R H N N V V P T M A L G V Q Q L K
UniRef90_P91622      E K A E P   T H D N L Q K F V A D L D L I R N R H N D V V Q T M A Q G V I E M K
UniRef90_Q00ZQ2      P     E I E S M E D E K F T N M L K R V M L R H E N V V P M I A R A V L E L K
UniRef90_S4RD11      V D K N P D D G K V L T N F T E T L L E V R T L H K D V V P T M A Q G V M E Y K
UniRef90_A8I520      P H     V K D A A D E L K F T E L L R G I Y R R H A N A V P V M A K G V S E L R
UniRef90_E1ZME9      P     K V K D A G D E L Q F T R L L Q H I Y R R H T N V V P V M A M G V A E L K
UniRef90_V4AZD6      E     N I D D K A G L T D F T D R L I Q I R N R H T N V V E T M A Q G I L E L K
UniRef90_D8RGP6      P     E I Q D A A D E M K F T D L I H Q I K I R H N N V T P T V A M G V Q E L K
UniRef90_W5EKW8      P     E V S N Q D D E L A F T Q M I K M I R V R H T N V V P T M A L G V Q Q L K
UniRef90_H2ZZH4      L D K S S E D Q R I L S N F T D A L I T V R N R H N N V V P T M A Q G V I E Y K
UniRef90_UPI00038381E8 L E K S P D D H S I N H F V A A L V N I R N R H N D V V P T M A Q G V I E Y K
UniRef90_B7QK03      E N C H G A D E K I L S K F C D A L I K I R N R H S N V V Q T M A Q G V I E Y K
UniRef90_C7YZN9      P D W P A D L H L Y N Q R F A Q T L H D I K R R H D G V V T T M A Q G I L E Y K
UniRef90_K7F7F5      L D K D P E D Q A T L G Q F T D A L I T I R N R H N D V V P T M A Q G V I E Y K
UniRef90_U9T1A8      P D W P E V R Y Y N E K F T K L I E A I K R R H D P V V T T V A Q G I L E Y K
UniRef90_I1MRY3      P     E I K N M N D E K E F T E L L K A I K V R H N N V V P T M A L G V Q Q L K
UniRef90_UPI0003AB7916             C F T D T V I R I R N R H N D V I P T M A Q G V I E Y K
UniRef90_F1QLF7      L E K D P D D K K I L T K F T E T L I N V R N R H N N V V P T M A Q G V L E Y K
UniRef90_L8G6I8      P     E I K T L E E N E R F C K T I N Q T L Q E H L I V I P K L A M G I L E C R
UniRef90_K0L070      S S K E T E F T N Y N R T V T D S L K K I K K R H D P T V A T M A Q G V I E Y K
UniRef90_F6YFP0      D K N K T   D A K N I E R F H K V L Q G I I Q R H R N V V E T M A H G I M E W K
UniRef90_I1QET7      P     E V R N R N D E L A F T Q M I K M I K V R H N N V V P T M A L G V Q Q L K
UniRef90_I1PBM6      P E V R N R D D E   L A F T E M I K M I R V R H N H V V P T M A L G V R Q L K
UniRef90_B2W727      Q D W P P E L A A Y N T K F A D T L E K I K R R H D S V V T T V A Q G I L E W K
UniRef90_C1MI13      P     T V K T N E D E E K F T E L I K R I M E R H A N V V P M I A R G V L E L K
UniRef90_G3X8J2      K D K S S E D L G A I H S F T D T V I K I R N R H N D V I P T M A Q G V I E Y K
UniRef90_UPI00046B4000           C F L Q V L I K V R N R H N D V V P T M A Q G V I E Y K
UniRef90_B6QFJ9      P     E I K S L D D N N R Y C D V L R E T L K E H L T V I P N L A M G V L E C Q
UniRef90_UPI0004560185 P     P I R D M D D N E R F C N L L K G L L D D H L T I I P S L T I G I V E S S
UniRef90_V8PGR8                  F T N A L V T I R N R H N D V V P T M A Q G V I E Y R
UniRef90_T1FZT5      E N A D P N N T A T L Q K F L E S L N N I R N R H L T V F E K M A A G M V E M K
UniRef90_K1RCH3      Q D K D P D D V K L T D F S K T I Q D I L N R H S Y V V E T M A Q G V I E M E
UniRef90_T2MDG7      Q D A   P F N V D T V D R F T K T L H A I K R R H D S T V E T M A Q G I I E L L
UniRef90_W3X8N9      K H R T I S N V E G E I Q F T S V L A E L V H T H Q D T I P I L A K G F L E C R
UniRef90_S7ZWU1      P K T D P S T L K E E S R F N D V L T E I V D T H R N T I P T L A R G F S E C K
UniRef90_R7YP20      A E K E I K T L E D E V K F T E V M A D L V H T H G N T I S I L A R G F L E A R
UniRef90_U1GF01      H K R H I T T Q E E E Q F T E T M A D L V H T H N N T I P I L A R G F L E C R
UniRef90_S8B4A2      Q K R R I T T L E E E N Q F G E V L A D L V Q T H T N T I P I L A R G F L E C R
UniRef90_A7S223      E     D D D G E E A N R F T E T L A H I K Q R H N N V V E T M A Q G I M E L R
UniRef90_M2W6H4      P     K P L D E E E L I F T E L I R K R Q R H D N V V K L L A M G V L E L K
UniRef90_F2SQS7      Q K R R I S T A E E E K F T E I M A D L V Q T H D N T I P V L A R G F L E C R
UniRef90_UPI000234E1B4 P     E V R N H E D E V A F T K M I K M I K V R H N N V V P T M A L G V Q Q L K
UniRef90_T1JG39      E D I D P S S V K A L D R F C E T L V K I R N R H M N V V Q T M A Q G V I E L L K
UniRef90_W2S526      Y Q K E I T T I I Q D E Q K F T E V M A D L V R T H S N T I P I L A K G F L E C R
UniRef90_C1LEL6      E K V T   W D D K S L N Q F N E L L A S I V T H H T V V E T M A Q G V M E M Q
UniRef90_R7UJU1      E N A S P   D D A V E A K F I D T L D M I R N R H R T V V E T M A Q G V M E M K
UniRef90_M3D9W5      A E R K L Q S L E E E I T F T E V M V N L V Q T H S N T I A I L A R G F L E A R
UniRef90_C7ZPL5      W H R P I S T T E D E V R F T N V L A E L V A T H T D T I P I L A K G F L E C R
UniRef90_W4ZAI3      P     H D M D T E R Q Y C K M V K T L L D D H K D V V T H L A E G F R E C R
UniRef90_L8HFP7      P V P N V A D M E S L H Q F Q D M L D H I K D R H S G V V T T M A E G V L E L K
```

```
                          130           140           150           160
QUERY                 D A C T V D P V T N Q N L Q Y F L D R F Y M N R I S T R M L M N Q H I L I F S D
UniRef90_F7DBD1       E A F G V D P V T N Q N V Q Y F L D R F Y M S R I S I R M L I N Q H T L L F D G
UniRef90_Q63ZR8       D S F G V D P V T S Q N V Q Y F L D R F Y M S R I S I R M L L N Q H T L L F D G
UniRef90_G1KPJ4       D S S K M D P F I N Q N I Q Y F L D R F Y M N R I S I R M L I N Q H T L I F D N
UniRef90_F1Q8X6       D T F G A D P V T S Q N I Q Y F L D R F Y M S R V S I R M L I N Q H T L I F D G
UniRef90_L7M628       E S H E P D P K T E H S I Q Y F L D R F Y M N R I S I R M L I N Q H T S L F G N
UniRef90_V9KFF3       E S F G E D H M T S Q N V Q Y F L D R F Y M S R I S I R M L I N Q H T L I F D G
UniRef90_W5LQT5       E A F G Q D P V T S Q N I Q Y F L D R F Y M S R I S I R M L I N Q H T L I F D S
UniRef90_S4S001       E T Y G V D P V T S Q N V Q Y F L D R F Y M S R I S I R M I I N Q H T L L F N G
UniRef90_W5MYK1       E A F G V D P V T N Q N V Q Y F L D R F Y M S R I S T R M L M N Q H T L I F H G
UniRef90_V9LFQ4       E A F G I D P V A N Q N V Q Y F L D R F Y L S R I S I R M L I N Q H T L V F D G
UniRef90_B5DGI3       Q K F G F D P F I S S N V Q Y F L D R F Y T N R I S F R M L I N Q H T L L F G D
UniRef90_T1KHA9       E T H S V D Q K T E S C V Q Y F L H R F Y M C R I S I R M L I N Q H T T L F G A
UniRef90_F6ZTN0       E K Y G F D P F V S S N I Q Y F L D R F Y M N R I S F R M L I N Q H T L L F G G
UniRef90_UPI0003C2AEDF D T F K V D P V M N Q N I Q Y F L D R F Y M N R I S F R M L I N Q H A L L F D G
UniRef90_UPI00038F0473 D T Y G D D P V S N Q N I Q Y F L D R F Y L S R I S I R M L I N Q H T L I F D G
UniRef90_G3QND6       E S F G V D P V T S Q N V Q Y F L D R F Y M S R I S I R M L L N Q H S L L F G G
UniRef90_H2V801       E T Y G T D P V V S Q N I Q Y F L D R F Y M S R I S I R M L L N Q H T L I F G G
UniRef90_S4R7B5       D A Y G V D P V S S N V Q Y F L D R F Y M S R I S I R M L L N Q H T L L F G G
UniRef90_E0W1B8       E L H K V D Q Q T E N S I Q Y F L D R F Y M S R I S I R M L I N Q H T L L F D K
UniRef90_J9K332       D S H E I D L H T E N S I Q Y F L D R F Y M S R I G I R M L I N Q H T L L F G D
UniRef90_C3ZGW2       D T H G I D H Q T D S N I Q Y F L D R F Y M S R I S I R M L I H Q H
UniRef90_E9GCN1       E S H P V D Q T I E H R I H Y F L D R F Y M S R I G I R M L I N Q H T L L F G G
UniRef90_D6WRE8       E S H D V D H Q T E H S I Q Y F L D R F Y M S R I S I R M L I N Q H T L L F G G
UniRef90_K4DHR6       K E R P Q D Y K D L K E V H Q F L D R F Y L S R I G I R M L I G Q H V A L H D P
UniRef90_K4AVT4       K H P K I D Y K D L D E I H Q F L D R F Y M S R I G I R M L I G Q H V A L H D P
UniRef90_UPI0003959A01 D T F K V D P V T N Q N I Q Y F L D R F Y M S R I S T R M L M N Q H T L L F D D
UniRef90_W4XVB9       E S Y K V D Q H E N N V Q Y F L D R F Y I S R I S I R M L I N Q H T L M F G G
UniRef90_B9HXA2       K E L G P K H E D L D E I H Q F L D R F Y M S R I G I R M L I G Q H V E L H N P
UniRef90_M0RU21       R D I N C K V V S E E E I H R F L D R F Y M S R I G I R M L I G Q H V A L H D P
UniRef90_D7UA98       N D I Y P K A R K L D E I H Q F L D R F Y M S R I G I R M L I G Q H V A L H D H
UniRef90_S8CTQ0       K D L N P K Y E D L D E I H G F L D R F Y M S R I G I R M L I G Q H V A L H D H
UniRef90_Q6PP99       K G M D P K I V Y E D E I H Q F L D R F Y M S R I G I R M L I G Q H V E L H N P
UniRef90_UPI000265719E Q Q H K S D V S S E H T I Q Y F L D R F Y M S R I S I R M L I N Q H T S L F G
UniRef90_U5EZ53       E S R G I E P S T E L S I Q Y F L D R L Y M S R I S I R M L I N Q H T I L F G E
UniRef90_Q8X073       R K R Q R M Q I D S T V Q S F L D R F Y M S R I G I R M L I R Q H I A L T D Q
UniRef90_A9TEA5       E D L G R N V G L N E E I H Q F L D R F Y L S R I G I R M L I G Q H V A L H N S
UniRef90_K7FH82       E K Y G F D P F V S S N I Q Y F L D R F Y T N R I S F R M L I N Q H T L L F G G
UniRef90_W1NWH9       Q D L G R K P G D L P E I H Q F L D R F Y M S R I G I R M L I G Q H V G L H D P
UniRef90_A0A059B6V6   K D M K Q K V V T E D E I H Q F L D R F Y M S R I G I R M L I G Q H V E L H N P
UniRef90_UPI00046B0D26 D G C T V D P V T N Q N L Q Y F L D R F Y M N R I S T R M L M N Q H I L F S D
UniRef90_Q2UEW3       R K R Q R L Q I D S T V Q S F L D R F Y M S R I G I R M L I G Q H I A L T E Q
UniRef90_A8I367       K D L N P K I Y K E D E I H Q F L D R F Y M S R I G I R M L I G Q H V E L H Y P
UniRef90_P91622       E N E G V D A P T E S S I Q Y F L D R L Y M S R I S I R M L I N Q H T L L F G G
UniRef90_Q00ZQ2       D R L S M D L N E F P E V H Q F L D G F Y M S R I G I R M L I G Q H I A L H E P
UniRef90_S4RD11       E V L G V D L A S D R N V Q Y F L D R F Y M S R I S F R M L I N Q H A L L F G
UniRef90_A8I520       E E L R L Q Q R L T E E I H Q F L D G F Y L S R I G I R I L I G Q H I A L H E P
UniRef90_E1ZME9       R E L S Q G L D D L P D I H R F L D G F Y L S R I G I R M L I G Q H I A L H E P
UniRef90_V4AZD6       E T H G I D N T E N R I Q Y F L D R F Y M S R I S I R M L I N Q H T L L F G N
UniRef90_D8RGP6       E E L G R R G G L L E E I H Q F L D R F Y M S R I G I R M L I G Q H V A L H Q P
UniRef90_W5EKW8       K D L G A F P S G I N E I H Q F L D R F Y M S R I G I R M L I G Q H V A L H D P
UniRef90_H2ZZH4       E A F G V D P V T N Q N V Q Y F L D R F Y M S R I S I R M L I N Q H T L L F D G
UniRef90_UPI00038381E8 E V F G Q D P V T S Q N I Q Y F L D R F Y L S R I S I R M L I N Q H T L V F D G
UniRef90_B7QK03       E T H E P D V R T E H S I Q Y F L D R F Y M S R I S I R M L I N Q H T S L F G K
UniRef90_C7YZN9       R R R Q R M Q I D S T I Q S F L D R F Y M S R I G I R M L I G Q H I A L T D Q
UniRef90_K7F7F5       E T Y G D D P V S N Q N I Q Y F L D R F Y L S R I S I R M L I N Q H S L L F D G
UniRef90_U9T1A8       Q H K K S T M I D T D I Q S F L D R F Y M S R I G I R I L I G Q H V A L N R
UniRef90_I1MRY3       N V F E D P D E I D E F L D R F Y M S R I G I R M L I G Q H V E L H N P
UniRef90_UPI0003AB7916 E S F G V D P V T S Q N V Q Y F L D R F Y M S R I S I R M L L N Q H S L L F G G
UniRef90_F1QLF7       E A F G V D P V T N Q N V Q Y F L D R F Y M S R I S T R M L M N Q H T L I F D G
UniRef90_L8G6I8       D L M K P E D M D K F M N T I L R A R I S R R V I A E Q H L A L T E T
UniRef90_K0L070       T S Q N L K Q I D Y S I Q S F L D R F Y M S R I G I R M L I G Q H I A I N D E
UniRef90_F6YFP0       E K C G N D Q S F H Q K I Q Y F L D R F Y T S R I G I R I L I N Q H I L L F G D
UniRef90_I1QET7       N E Q Y R T P T A F D E I H E F L D R F Y M S R I G I R M L I G Q H V A L H D P
UniRef90_I1PBM6       K D L K A F P P G I D E I H Q F L D R F Y M S R I G I R M L I G Q H V A L H E P
UniRef90_B2W727       R K R Q R L Q I D H I Q A F L D R F Y M S R I G I R M L I G Q H I A L T D Q
UniRef90_C1MI13       M E M A A Q I N D L P E I Q A F L D G F Y M S R I G I R M L I G Q H V A L H E
UniRef90_G3X8J2       E S F G I D P V T S Q N V Q Y F L D R F Y M S R I S I R M L I N Q H S L L F G G
UniRef90_UPI00046B4000 E K F G F D P F I S S N I Q Y F L D R F Y T N R I S F R M L I N Q H T L L F G G
UniRef90_B6QFJ9       G L V K P D E I D R F L N T M L R A R I S R R V I A E Q H L A L T E T
UniRef90_UPI0004560185 H H L P P H Q L D K F M E R M L R S R I S R R V L A E Q H I A L S E A
UniRef90_V8PGR8       E A Y G D D P V S N Q N I Q Y F L D R F Y L S R I S I R M L L N Q H T L I F D G
UniRef90_T1FZT5       D Y L H V E S N L D E R I H Y F L D R F Y L S R I S I R L I I H Q H L L L F G K
UniRef90_K1RCH3       D T Y G M D D K L S E R I Q Y F L D R F Y M S R I S I R M L L T Q H A A L F G N
UniRef90_T2MDG7       E S E G E S C F L P A V Q Y F L D R F Y M N R I G I R L L I S Q H L A L F K E
UniRef90_W3X8N9       R Y I S P T E V T R F L D E H L R A R I G T R L I A E Q H I A L H Y S
UniRef90_S7ZWU1       R Y V N S D S I T D F L E E H L R A R I G T R L L A E Q H L A L H D A
UniRef90_R7YP20       K Y I S P K E V T R F L D E H L R A R I G T R L I A E Q H I A L H F S
UniRef90_U1GF01       K Y I T P S E V T K F L E Q H L R A R I G T R L I A E Q H I A L H M A
UniRef90_S8B4A2       K Y V S P D D V T R F L D T H L R A R I G T R L I A E Q H L A L H F A
UniRef90_A7S223       Q K E G L S A F H P S I Q Y F L D R F Y M N R I G I R L L I T Q H L M L F G
UniRef90_M2W6H4       R Y C G K G T E D I S I H D F L D R F Y M S R I G I R F L I S Q H I A M H E P
UniRef90_F2SQS7       K Y I S P A E V T A F L D R L R A R I G T R L I A Q Q H L A L H H A
UniRef90_UPI000234E1B4 N E Q K K L P P G F D E I H G F L D R F Y M S R I G I R M L I G
UniRef90_T1JG39       E N H E I D H I T E H S I Q Y F L D R F Y M S R I S I R M L I N Q H T L L F G S
UniRef90_W2S526       K Y I D P N E V T R F L D H L R A R I G T R L V A E Q H L A L H
UniRef90_C1LEL6       E R H K T D I I T N V Q F L D R F Y M M R I S I R M L L N Q H L L M F G S
UniRef90_R7UJU1       E N F G D D N V T L E Q T Q Y F L D R F Y M S R I S I R M L I H Q H C L L F A K
UniRef90_M3D9W5       K Y I S K E E I T R F L D E H L R A R I G T R L I A E Q H I A L H F S
UniRef90_C7ZPL5       R Y I S P E E V T R F L E E H H L R A R I G T R L I A E Q H I A L H F S
UniRef90_W4ZAI3       K H I T D E S L I H N F L D R L T S R I G T R L A E H H L F L H Q D
UniRef90_L8HFP7       N R L G R E M I D T S V Q F F L D R L Y M N R I S I R M L I T Q H L E L F K Q
```

```
QUERY                        S Q T G N
UniRef90_F7DBD1
UniRef90_Q63ZR8
UniRef90_G1KPJ4              N N S
UniRef90_F1Q8X6              S N P G H
UniRef90_L7M628              E N N T H
UniRef90_V9KFF3             R T N P
UniRef90_W5LQT5             A S Q P
UniRef90_S4S001             S L N P
UniRef90_W5MYK1             S T N P
UniRef90_V9LFQ4             S N P A H
UniRef90_B5DGI3            D R T
UniRef90_T1KHA9            D K P G H
UniRef90_F6ZTN0           D I N P
UniRef90_UPI0003C2AEDF     N A N
UniRef90_UPI00038F0473     S T N P
UniRef90_G3QND6           K G K G S
UniRef90_H2V801           K V N P
UniRef90_S4R7B5
UniRef90_E0W1B8           N V E G
UniRef90_J9K332
UniRef90_C3ZGW2
UniRef90_E9GCN1           Q M N
UniRef90_D6WRE8
UniRef90_K4DHR6          N P L P N
UniRef90_K4AVT4          N P P P D
UniRef90_UPI0003959A01   S G S G H
UniRef90_W4XVB9          I P T T H
UniRef90_B9HXA2          N P P P H
UniRef90_M0RU21         D P E P G
UniRef90_D7UA98         N P Q P D
UniRef90_S8CTQ0         N P A P D
UniRef90_Q6PP99         N P P P H
UniRef90_UPI000265719E
UniRef90_U5EZ53         I P R G D
UniRef90_Q8X073        N H
UniRef90_A9TEA5        P P S P N
UniRef90_K7FH82       D T N P
UniRef90_W1NWH9       N R E P G
UniRef90_A0A059B6V6   N P P P H
UniRef90_UPI00046B0D26 S Q T G N
UniRef90_Q2UEW3       T H V R H
UniRef90_A8I367       N P R P H
UniRef90_P91622       N P
UniRef90_Q00ZQ2       A K D G
UniRef90_S4RD11
UniRef90_A8I520       S K P N H
UniRef90_E1ZME9       P Q R E N
UniRef90_V4AZD6       E I G H H
UniRef90_D8RGP6       N P A P G
UniRef90_W5EKW8      D P E P G
UniRef90_H2ZZH4      T T N P
UniRef90_UPI00038381E8 A T N P
UniRef90_B7QK03      E S G S H
UniRef90_C7YZN9      S H
UniRef90_K7F7F5      S T N P
UniRef90_U9T1A8
UniRef90_I1MRY3      N P P P N
UniRef90_UPI0003AB7916 K G K G S
UniRef90_F1QLF7      S T N P
UniRef90_L8G6I8      Y N S P
UniRef90_K0L070      P V R D N
UniRef90_F6YFP0      S A V R H
UniRef90_I1QET7     D P E P G
UniRef90_I1PBM6     D P E P G
UniRef90_B2W727
UniRef90_C1MI13
UniRef90_G3X8J2     K I N P
UniRef90_UPI00046B4000 D T N P
UniRef90_B6QFJ9     F N
UniRef90_UPI0004560185 L D D P
UniRef90_V8PGR8     S T N P
UniRef90_T1FZT5     S D S I N
UniRef90_K1RCH3
UniRef90_T2MDG7     N L N
UniRef90_W3X8N9     S A
UniRef90_S7ZWU1     S
UniRef90_R7YP20     S K P H
UniRef90_U1GF01     S Q P G S
UniRef90_S8B4A2     S Q P
UniRef90_A7S223
UniRef90_M2W6H4
UniRef90_F2SQS7     S L S E N
UniRef90_UPI000234E1B4
UniRef90_T1JG39     D M N G H
UniRef90_W2S526
UniRef90_C1LEL6     E L N K H
UniRef90_R7UJU1     N I N P G
UniRef90_M3D9W5     S Q P H
UniRef90_C7ZPL5     S Q S H
UniRef90_W4ZAI3     K N D
UniRef90_L8HFP7     A Q T N N
```

Position markers: 1   10   20   30   40

- UniRef90_B2AZG1
- UniRef90_X8J738
- UniRef90_L8FMH9
- UniRef90_W4VZ13
- UniRef90_N6TUF7
- UniRef90_L7I4E7
- UniRef90_I1C3B0
- UniRef90_H9J171
- UniRef90_E9C2W6
- UniRef90_B3RPM0
- UniRef90_D8QNZ5
- UniRef90_A0A015LRF5
- UniRef90_B3RPL9
- UniRef90_L2G7U7
- UniRef90_T0QL66
- UniRef90_Q5AQG9
- UniRef90_J5JUX6
- UniRef90_K8EKG3
- UniRef90_J3NR39
- UniRef90_E9CEX1
- UniRef90_I1CNL9
- UniRef90_W6MIR8
- UniRef90_U4LFQ8
- UniRef90_UPI0003EDEA9D
- UniRef90_UPI0004449F12
- UniRef90_W2S5K1
- UniRef90_M2N5V2
- UniRef90_R7SYV0
- UniRef90_O02623
- UniRef90_C3ZHT9
- UniRef90_W5N744
- UniRef90_R7Q7P3
- UniRef90_U6IU11
- UniRef90_U9T7A6
- UniRef90_J5JE31
- UniRef90_W4GYZ2
- UniRef90_D0MQK7
- UniRef90_B7PE41
- UniRef90_C1EA66
- UniRef90_A0A059LIH5
- UniRef90_N1J7J2
- UniRef90_A0A024JLQ8
- UniRef90_S2JYQ3
- UniRef90_K2S234
- UniRef90_A0A024GND2
- UniRef90_K3WGE5
- UniRef90_V9KZC8
- UniRef90_M1VL97
- UniRef90_G4TF85
- UniRef90_Q0UBF1
- UniRef90_G2WS49
- UniRef90_G0SF91
- UniRef90_UPI00039592D3
- UniRef90_V8NEI3
- UniRef90_R7TIP1
- UniRef90_G7YRB5
- UniRef90_U4LTP1
- UniRef90_K1RCK5
- UniRef90_M7TR73
- UniRef90_W7HY01
- UniRef90_Q1JPJ6
- UniRef90_Q6C089
- UniRef90_F0XD18
- UniRef90_M3AVV3
- UniRef90_R7Z0X6
- UniRef90_V4AEU8
- UniRef90_D8TV14
- UniRef90_D8PNK5
- UniRef90_F0XFD8
- UniRef90_A5DC50
- UniRef90_W5M4H0
- UniRef90_W5KJL0
- UniRef90_A8NXL3
- UniRef90_B0CYD1
- UniRef90_M7C3S7
- UniRef90_Q0TY37
- UniRef90_V9CZN3
- UniRef90_S2JZM1
- UniRef90_F9XI76
- UniRef90_UPI00044161CD
- UniRef90_B8NGP6
- UniRef90_U1HZ72
- UniRef90_A7SER7
- UniRef90_UPI0004623211
- UniRef90_W9CLG0
- UniRef90_G3B5Z7
- UniRef90_UPI0004623014
- UniRef90_F6PXB7
- UniRef90_L8X9S3
- UniRef90_T1EG60
- UniRef90_M2RQJ0
- UniRef90_T1H7F7

```
                                        50              60              70            80
UniRef90_B2AZG1          I R L A H R I Q A L R N L P Y I V V S N P N I R K I Y N N Y Q H S L S T L L P W
UniRef90_X8J738          V R I A H R I R D L Q G L P Y V V K Q E W V A K V Y E L Y W S A F E K L R K Y
UniRef90_L8FMH9          I R L A H R I Q A L R N L P Y I A V S N P N I S R I Y A N Y Q H L S T L L P Y
UniRef90_W4VZ13          V R L A N I M K E I H L L P E N L L K M P S V G I V N N L Y I T S F E E I I H F
UniRef90_N6TUF7          V R L A N I M K E I A L L P E N L L R M P S V I A V N D W Y M R S F Q E L L E F
UniRef90_L7I4E7          T R L S H R I R D M Q M L P Y Q V V S N Q H I A E V Y N M Y W T A F D T F R K V
UniRef90_I1C3B0          I R I A H R I E L D E L P P S L G E M P S I V K V K N W Y A Q S F E E L I D Y
UniRef90_H9J171          S A L A N I M K E I A L L P E N L L R M P S V G L V N Q W Y E R S F E E I T R F
UniRef90_E9C2W6          V R L A H M T K E I E S L P E K L L G Q Q S V G R V H G W Y I K S F E D L L N F
UniRef90_B3RPM0          I R L A H I M K E L R Y L P V G L L D M P S V Q R V D N W Y A T S L I E L I D F
UniRef90_D8QNZ5          V R L S H K V V E L E N L P F G L S S K A P V L K V R D W Y V E S F K E I H G F
UniRef90_A0A015LRF5      V R L A R R V K A L Q N L P F I V G T N P Y I K S I Y K L Y N S F E L I R S F
UniRef90_B3RPL9          I R L A H I M K E L H H L P N I L M E M P S V Q T L N G W Y S Q S L S E L I E F
UniRef90_L2G7U7          T R I A H R I R D L E Q L P Y V V V E N P H I K E V Y E L Y Q R A F D T F R K V
UniRef90_T0QL66          I R Y A H R V K D L D T L P Y G L C Q M P S V R Q V K E W Y I H S M E E L L A F
UniRef90_Q5AQG9          T R L A H R I R D I Q K L P Y A V A N P H F S L V Y E L Y K A F E R F R T V
UniRef90_J5JUX6          S R I A H R L R D M Q Q L P Y V V V T N P H I N D V Y N L Y K A F D T F R K I
UniRef90_K8EKG3          I R L A H R V A E L E N L P F G L S T K P Q V L T V R D W Y V E S F E D I R E M
UniRef90_J3NR39          V R L A H R L Q A L R S L P Y I V V S N P N I R T I Y N N Y Q H L S E T L L P W
UniRef90_E9CEX1          I R L A H R I R D F Q K L P F I V G C N P H I Q S V Y S L Y L R S F D S L R Q W
UniRef90_I1CNL9          I R I A H R I R E F Q K L P Y L L G T N P H I Q C V Y D L Y W Q A F E K L R N I
UniRef90_W6MIR8          V R L A L R I K D L Q K L P F G V N N F H I A Q V Y E S Y C H C F N M F R W K
UniRef90_U4LFQ8          T R L A H R I R D M Q K L P Y V V V T N K H L S Y V Y D L Y Y S A F D S F R S V
UniRef90_UPI0003EDEA9D   V R L A N T M R E V N L L P D N L L N R P S V G L V Q S W Y M Q S F L E L L E Y
UniRef90_UPI0004449F12   V R I A H R I R D L Q A L P Y V V V M Q E G V A R V Y E L Y W T A F E K F R R F
UniRef90_W2S5K1          T R L A H R L R D M Q R L P Y V V V T N P H L S L V Y E L Y Y K S F E N F R R V
UniRef90_M2N5V2          T R I A H R L R N M Q T L P Y S A L S N P H I K H V Y E L Y Y H A F E L L R K V
UniRef90_R7SYV0          I R I A H R L R D M Q A L P Y V V V T Q E G I A K V Y E L Y W N A F D K F R R Y
UniRef90_O02623          V R L A N I M Q E I S L L P P T L K M P S R R L V S N W Y C E S F E D L L Q F
UniRef90_C3ZHT9          V R V A H R I R D F R H L P F I V G C N P T I L H V H E L Y I R S F H L L S E F
UniRef90_W5N744          W G F L M I L G E I D E S P D I L K G N P E V E L L L S M Y V Q S L L D L L E F
UniRef90_R7Q7P3          V R L A R A R E L G L E P Y G L A D M P S V R E V R E M Y Q N S F C D I V E
UniRef90_U6IU11          V R F A N L Q E L H L L P K K L L E T P S A F L V T S W Y E E T F M D L M S F
UniRef90_U9T7A6          I R L A H R I R D F Q S L P F I I G T N P H I A M V Y E L Y W L A F E K L R K I
UniRef90_J5JE31          I R L A H R I Q A L R N L P Y I V V S N P N V A R I Y R N Y L H S L S I L L P Y
UniRef90_W4GYZ2          I R L S H R V K D L D T L P Y G L C Q M P S V Q L V K K W V K S F E E L V A F
UniRef90_D0MQK7          V R Y A H R I K N L E N L P H G L S D M P S V K Q V R E W Y V N S A Q E L L S F
UniRef90_B7PE41          V R I A H R I A G F R S L P F I V G C N P T I L A V H E L Y T Q T F Y L L T D F
UniRef90_C1EA66          V R F A H R V A E L E N L P L G L S S K E Q V Q T V R D W Y V E S Y D E L K K F
UniRef90_A0A059LIH5      V R L A H R V A E L E T V P Y G L S G K A S V M K V R D W Y V E S F E K E L R D F
UniRef90_N1J7J2          V R L A H R I K A L R N L P F I V V T N P S I S K V Y N I Y L H S L A K L L P Y
UniRef90_A0A024JLQ8      T R L A H R I R E M Q E L P F G V V S N A H L C R V Y E M Y Y N A F N Q F R K F
UniRef90_S2JYQ3          I R L A H R V K E L D E L P R S L G D M P S I I K V K N W Y A Q S F R D N F E N
UniRef90_K2S234          T R I A H R L R D M Q T L P Y V V V T N P N I S Y V Y E L Y Y R A F E R Y R R
UniRef90_A0A024GND2      V R Y A H R I R N L E D L P H G L N R M P S V Q V K V R E W Y L Q S I E E L L T F
UniRef90_K3WGE5          C R Y A H R I K N L E D L P H G L S D M P S V K H V R N W Y I H S V E E L L A F
UniRef90_V9KZC8          V R I A H R I K S I R N L P F I I G C N P T I L Q V H E L Y I R A F S K L V E F
UniRef90_M1VL97          I R L A H R V V E L Q S L P Y G L S E M R S V K R V C E L Y E N S F A D I L M
UniRef90_G4TF85          V R I A H R I R D M Q L L P Y A V V T E E H V A Q I Y S L Y W S A F E K L R N Y
UniRef90_Q0UBF1          T R L A H R L R D I Q T L P Y V V V A N P H L A H V Y E S Y L R A F E R F R K V
UniRef90_G2WS49          I R L A R R I Q A L R N L P F I V V S N P N I R Q I Y D K Y E T S L S T L L P W
UniRef90_G0SF91          T R I A H R I R D M Q R L P Y V V V T N P H I N E V Y D L Y Y T A F D T F R K V
UniRef90_UPI00039592D3   V R I A H R I Q G F R N L P F I V G C N P T I L H V H E L Y I R A F Q K L S D F
UniRef90_V8NEI3          V R L A N I L K E I D L L P S L L L G T T S V
UniRef90_R7TIP1          V R I A H R I A G L R G L P F I V G C N P T M L A I H E L Y I R A F H V L T E F
UniRef90_G7YRB5          V R I A N I M Q E L H L L P E A L I R T P S A L I V E R W Y E Q S F C H L V D Y
UniRef90_U4LTP1          V R L S R R I V A L R N L P F I V S N P H V S Q I F N N Y L H S L R S I L S F
UniRef90_K1RCK5          V R I A H R I R G F R G L P F I V G C N P T I L K V H E M Y I R A F Y I L Y E H
UniRef90_M7TR73          T R I A H R L R D M Q R L P Y A V V S N P H I H D V Y E L Y Y D A F D L F R R
UniRef90_W7HY01          T R L A H R I R D M Q R L P Y V V V T N P N V S K V Y E K Y Y N S F E L L R K T
UniRef90_Q1JPJ6          M K E I N L L P D R V L S T P S V Q L V Q S W Y V Q S L L D I M E F
UniRef90_Q6C089          T R L A H R I R D L Q C L P F S V M R N E H M S Q V Y E L Y Y Q A F N Q F R K F
UniRef90_F0XD18          I R L A H R I R D I Q A L P Y A V V S N P H I S A V Y E L Y Y D A F D R L R R L
UniRef90_M3AVV3          T R I A H R L R N I Q M L P Y T A V T N Q H I S Q V Y A L Y H A A F E R F R K V
UniRef90_R7Z0X6          I R L A H R V Q E L S E L P D G L N E N P S V K Q G H N S A R R Y Y V A A D D G
UniRef90_V4AEU8          V R I A H R I A G F R G L P F I V G C N P T I L Q V H E L Y I R A F H I L S E F
UniRef90_D8TV14          R R L A R R L M D L Q L L P Y I V A N P H I K K V N Q Y H V S F E T L R R V
UniRef90_D8PNK5          V R I A H R I R D L Q A L P Y V V V T Q E G I A R V Y E L Y W E A F E R H V L A
UniRef90_F0XFD8          I R L A R R L Q A L R S L P Y I V V S N P H V R Q I Y G N Y R H S L R S L L P L
UniRef90_A5DC50          I R L A I R I R D L Q T L P F G V V N N H L A Q V Y E S Y Y R S F N V L R R W
UniRef90_W5M4H0          V R I A H R I K A F R G L P F I I G C N P T I L R L H E L Y I R A F H K L S E F
UniRef90_W5KJL0          V R I A H R I K G F R S L P F I I G C N P T I L Q V H E L Y I R A Y H M L V D Y
UniRef90_A8NXL3          V R I A H R I R D L Q A L P Y V V V T Q E G V E K V Y K L Y W T A F E K F R T Y
UniRef90_B0CYD1          V R I A H R L R D L Q A L P Y V V V T Q E G V A K V Y K L Y W T A F E K F R N Y
UniRef90_M7C3S7          M K E I S L L P D N L L K T P S V Q L V Q S W Y V Q S L Q E I L D F
UniRef90_Q0TY37          I R L A H R V Q E L N D L P D G L N E M P S I C R A Q G Q Y R S A P E H N D D G
UniRef90_V9CZN3          V R L A H R V E E L R T L P D R L L N N P S L K K S S M N S R R Y F A A L D D G
UniRef90_S2JZM1          V R L A H R I R D F Q Q L P F F V G T N P H I E Y V Y K L Y W G A F E S L R A C
UniRef90_F9XI76          T R L A H R L R N M Q T L P Y S A V T N Q H L S H A Y E M Y Y A A F E S L R
UniRef90_UPI00044161CD   V R I A H R I R N M Q S L P Y V V V T Q D Q V A K V Y E L Y W K A F D K F R T Y
UniRef90_B8NGP6          A R L A S R I E A L R N L P F I I V S N P H V S K I Y N N Y L H S L S T L L P Y
UniRef90_U1HZ72          T R L A H R L R D M Q A L P Y V V V T N P H L S H V Y K A F E T L R R V
UniRef90_A7SER7          I R I A R R L K D F Q Q L P Y I I L S N P S I H D T Y E L Y L R A F T S L T K Y
UniRef90_UPI0004623211   V R I A H R L R D M Q A L P Y V V V T Q E G V A K V Y E L Y W T A F D K F R R F
UniRef90_W9CLG0          I R L A H R V Q E I T T L P R P Q L S N P S I M R G Q A A T R R Y F A T V E D S
UniRef90_G3B5Z7          I R L A H I R I E L Q T L P F G I V N N F H L Q I Y D S Y Y H S F N A F R K M
UniRef90_UPI0004623014   R R L A M R A R S L E S L P F I V G M N P F I A R T L Q A H R Y S A F Q F L I K H
UniRef90_F6PXB7          V R L A N T M R E V N L L P D N L L N R P S V G L V Q S W Y M Q S F L E L L E Y
UniRef90_L8X9S3          V R I A H R I R D L Q A L P Y V V V K Q E W V A K V Y E A S A Q
UniRef90_T1EG60          V R M A N I M V E M S L L P E V L L T T Q S V T Q I K E W Y D M S F K E L L E F
UniRef90_M2RQJ0          I R I A H R L R D M Q A L P Y V V M N Q E G V T N V Y E L Y W S A F E K F R R Y
UniRef90_T1H7F7          V R L A N I M K E I A L L P K N L I G T N S V N D W Y L K S F E E V L E F
```

```
                                              90            100           110           120
UniRef90_B2AZG1         Q G R T I S N L E D E I R F T E V L A E L V Q T H T D T I P I L A R G F L E C R
UniRef90_X8J738         P     E I H T Q K D N R E F F C K F L R R I L D E H A P V I P W I S L G L
UniRef90_L8FMH9         T D T H I S S L A D E V K F T A V L A D L V D T H R D T I P T L A R G F L E C R
UniRef90_W4VZ13         E K V D V N D   A T L D K F C Q A L I K I R N R H T D V V Q T M A Q G V L E L K
UniRef90_N6TUF7         E K K D P   T P G T M E H F C N E L V K I R N R H S D V V E T M A Q G V L E L L K
UniRef90_L7I4E7         K     E V K S L A D N D S F C E V I S G M L K T H L T V I P K L A M G V L E C S
UniRef90_I1C3B0         P Q E K P R N N Y Y T D N L V Q T I E E V K R R H D P V V T T I A Q G I I E Y K
UniRef90_H9J171         E Q M E P   D P P L T Q F C E R L V H I R N R H A D V V Q T M A Q G I L E L K
UniRef90_E9C2W6         P I N K A D A E H Y V K S F T E V I R N I H R R H A P V V T T M A Q G I L A L K
UniRef90_B3RPM0         R D Q H K S C E V T A K N F T N L V A N I R Q R H N S V V E T M A Q G I I E L K
UniRef90_D8QNZ5         P     E I V T P S D E L E F T Q L I H D V K E R H N H V I P M L G L G L Q E L K
UniRef90_A0A015LRF5     P E   N I C D K G I D E K F A E M L K E M V T S H S E N I P T L A K G F Q E C K
UniRef90_B3RPL9         R E K N A D N D S D C D K F T D L I H N I N Q R H S T V I E T M A K G I M E L K
UniRef90_L2G7U7         K     E I K S L E D N E R F C K L I S G M L K A H L T V I P K L S M G I L E S R
UniRef90_T0QL66         P     K V Q T A A D E R R F T S M I E S I K D R H N A T L F T M A R G V H E L K
UniRef90_Q5AQG9         P     E I R T L D D N D R F C D I L R K T L K E H L V V I P R L A M G V L E C R
UniRef90_J5JUX6         K     E V K T L E D N D R L C E I I S E N L K G H L T V I P K L A M G I L E C R
UniRef90_K8EKG3         K     E I N S M E R E E K F T E L L S S V M K R H N D V V P M I A R G V L E L K
UniRef90_J3NR39         E E R G V A T L E E E V E F T A V L A Q L V Q T H A D T I P T L A R G F L E C R
UniRef90_E9CEX1         P     P I E T M E Q E R A F T E M L T R L V D D H L N V V E L G K G C V E S K
UniRef90_I1CNL9         P     E I N N R E E N E K F C K V L M E S L D V H Q V V I P E L A K G I Y E C E
UniRef90_W6MIR8         P     R I E T L E E N D E F C V F L K K V L D D H L L I L P H L M M G A L E C S
UniRef90_U4LFQ8         P H     I K T T E D N D R F C T K I K A A L K E H L T V I P R L A M G V L E C R
UniRef90_UPI0003EDEA9D  E N K S P E D P Q V L D N F L Q V L I K V R N R H N D V V P T M A Q G V I E Y K
UniRef90_UPI0004449F12  P Q   I D T L A E N E A F C I F L R E L L N E H A S V I P N L S L G L A L S S
UniRef90_W2S5K1         P V     V R T P E D N D Q F C K V I S E S L K E H L A V I P N L V M G V L Q C Q
UniRef90_M2N5V2         S H     I A T L R D N D R F C D V L K M C L K D H L S V I P R L A Q G I L E I Q
UniRef90_R7SYV0         P Q     I N T L Q E N N A F C D F V A N L L K D H K S V I P N L S L G M S L S S
UniRef90_O02623         E H A Q V E   P D I M S K F N D Q L Q T I L K R H S R V V E T M A E G F L E L R
UniRef90_C3ZHT9         P     P V E D F E S E E K Y T K L V K D L L D D H K D V V T L L A E G F R E S R
UniRef90_W5N744         L D K S P E D Q S I L S N F T D A L V K I R N R H N E V V P T M A Q G I I E Y K
UniRef90_R7Q7P3         S S P P Q D A A D E E K F S E I L G R I R T R H D D V V K L I A K G V I E L K
UniRef90_U6IU11         E D   K D L T A K D C D D F L V T L D K A L S R H T T V V E T M A A G V M E M R
UniRef90_U9T7A6         P L     I K D M D E N D E F C N T L K G L L K E H L V V I P Q L S M G I S E C S
UniRef90_J5JE31         H R A A I V T P E D E V R F T H V L A E L V A T H T D T I P V L A K G F L E C R
UniRef90_W4GYZ2         P     R V R T S E D E R A F A A L V E S I W E R H N G T L Y T M A R G V Y E L K
UniRef90_D0MQK7         P     K V E T Y Q D E L A F R N L I E S I K G R H S G T L Y T M A K G V H E L K
UniRef90_B7PE41         P     P V T D F E S E S R Y S E T V Q Q V L D D H K D V V T Q L A A G F K E C R
UniRef90_C1EA66         P     P I A N R E D E A K F T T L I K R V M D R H A N V V P M I A R G V L E L K
UniRef90_A0A059LIH5     P     R V R D G A D E L A F T D L L R G I Y H R H R N V V P V M A L G L A E L K
UniRef90_N1J7J2         S T R I I T T I D E E K I F T G I L V D L V E S H S H T I S T L A Q G F L E C R
UniRef90_A0A024JLQ8     P     R I R T L E D N D R F C L L L N K L L N E H L S I I P N L V I G A I E C S
UniRef90_S2JYQ3         I K C T P P I L S Y T D S F V K A I E N V K R R H D P V V T T M A Q G I M E Y K
UniRef90_K2S234         I R E V K S V E D N D E L C K V I R E T L N E H L T V I P R L A I G V L E V Q
UniRef90_A0A024GND2     P     R V E T P D Q E L K F T D L I E S I K K R H N G T L F T M A R G V Y E L K
UniRef90_K3WGE5         P     K V E T F Q D E L R F R S L I E S I K A R H N G T L Y T M A K G V H E L K
UniRef90_V9KZC8         P     P I K D H E T E L Q Y C R L L H Q L L D D H R D V V G M L A E G L K E S R
UniRef90_M1VL97         H P R P E R E G E E E R R F T E L L R R I R D R H S D V V R Q I A C G V L E L K
UniRef90_G4TF85         P Q     I N D R A G N D R F C E F L H E I L Q E H S A A I P I L S L G L
UniRef90_Q0UBF1         P     E I R S L E D N E K Y C K V L E E T L T E H A T V I P R L A I G V L E V R
UniRef90_G2WS49         W K N P V R T L D D E V R F T Q V L A D L V R T H T D T I P I L A R G F L E A R
UniRef90_G0SF91         K     K I K T L E D N D R F C D I I R T M L R A H L P V I P K L A M G I L E C N
UniRef90_UPI00039592D3  P     P I Q V R S D E S R Y C A L L R Q L L E D H K D V V T L L A E G L R E C R
UniRef90_V8NEI3         H F I D A I T K I R N R H S V M P M M A Q G V L E Y R
UniRef90_R7TIP1         P     P I T D F D I E A R Y C Q M L R Q L L E D H S D V V T M L A E G F K E T K
UniRef90_G7YRB5         E G I E   W N E K S L G K F N H T L A E I R H R H T T T V E T M A Q G V M E M E
UniRef90_U4LTP1         P S S S L T N P L E E L K F T E L L T D I V K T H S N T I P T L A R G F L E C R
UniRef90_K1RCK5         P     P V V D F A S E Q V Y S H T L R T L L D D H S N V V T M L A E G F S E C R
UniRef90_M7TR73         V R E V Q T L D D N E R F C A Q L A Q M L R A H L T V I P K L T M G M L E C S
UniRef90_W7HY01         P E I T T S   E G N D E F F C Q L I R R M L T E N L S V I P D L A I G A L E C R
UniRef90_Q1JPJ6         L D K D P E D H R T L S Q F T D A L V T I R N R H N D V V P T M A Q G V L E Y K
UniRef90_Q6C089         P A   I K T L E D N D K F C K L V S D L L D H L T I I P S L V T G G I E C A
UniRef90_F0XD18         K     E I R S L D D N D A L C T A I G H T L Q A H L P V I P K L A M G I L E S S
UniRef90_M3AVV3         P     E V R T L E D N H R Y C E L L K L T L N E H L A V I P Q L A I G I L E I Q
UniRef90_R7Z0X6         Q G W P E L S Q Y N N Q F R E T L D K I K R R H D S V V T T V A Q G I L E L W K
UniRef90_V4AEU8         P Q   V S D Q Y V E E D F S E T L R N L L D D H K D V V T L L A E G F A E C R
UniRef90_D8TV14         P     M V R T S E D N Q E F S Q L L R Q H L D Q H A P M L D S L A T G L R E C C K
UniRef90_D8PNK5         H Y P P I N T L E E N N E F C R F L A G L L N D H A T V I P L L S L G L S L S S
UniRef90_F0XFD8         W R R R A E T L D D E I A F T E S L A D L V A T H Q N T I P F L A Q G F L E C R
UniRef90_A5DC50         P     K I T T L D D N E A F C S V L S N L L T D H M S N L P H L M M G A L E V S
UniRef90_W5M4H0         P L     I N D H E T E A K Y C Q L L R R L L D D H L L A E G V R E S R
UniRef90_W5KJL0         P A   I K D Q E T E A R Y S K L V Q Q L L D D H K D V V T M L A E G F R E C R
UniRef90_A8NXL3         P     P I T S I E E N T K F C K F V G S L L D D H A V V I P N L S L G
UniRef90_B0CYD1         P     P V T T L K E N D E F C N F L S V L L D E H A S V I P N L S L G L S L S S
UniRef90_M7C3S7         K D K S A E D S E V I H R F T D T V I T I R N R H N D V I P T M A Q G I I E Y K
UniRef90_Q0TY37         Q E W P E L S A Y N T K F A D T L E K I K R R H D S V V T T V A Q G I L E W K
UniRef90_V9CZN3         K E W P P V L S E Y N R K F A R T L E M I K R R H D V V T T V A Q G I N E W K
UniRef90_S2JZM1         P     P V E K H Q D N T H F C E L L H T L L E D G L L V L P R L A Q G L S E S A
UniRef90_F9XI76         K V S E V R S L S D N D F F C E T I K M T L N E H L T V I P R L A M G I L E V Q
UniRef90_UPI00044161CD  P     P I A T L E E N D A F C R F L H D L L N E H L P V I P N L F L G L
UniRef90_B8NGP6         Q Q R Q I T T L E E E K H F A E V L A D L V H T H T N T I P I L A R G F L E C R
UniRef90_U1HZ72         P L     I K T V E E N D E Y C K A I S G T L K E H L A V I P N L V I G V L E C Q
UniRef90_A7SER7         P     K I D N L E E N E K F L V L N D H Q H V V T N L A E G F Q E C K
UniRef90_UPI0004623211  P     E I T N L Q E N D A F C E S V R G L L N D H K S V I P N L S L G
UniRef90_W9CLG0         T D W P P E L H D Y N Q R F A Q T L N H I K R R H D G V V T T V A Q G I L E Y K
UniRef90_G3B5Z7         P     K I T S L P E N E K F C K Q L S V L L D D H V F N L S H L M M G A L E V S
UniRef90_UPI0004623014  P     P V K T L E D N A R F I E Q L A E L V Q S H A N D I P A M A K G F Q E C A
UniRef90_F6PXB7         E N K S P E D P Q V L D N F L Q V L I K V R R H A N D V P T M A Q G T I V I
UniRef90_L8X9S3         I H T Q K D N Q E F C K F L R G I L D E H A P V I P W I S L G L
UniRef90_T1EG60         T K L D P N K P K V L E R F L V T L G N V K N R H S S V V E T M A E G V R E M R
UniRef90_M2RQJ0         P Q   V N T I A E N E S F C V F L N G L L K D H K A A I P N L S L G L S L A S
UniRef90_T1H7F7         E K T E P T H E   N L L V H I R N R H S D V V Q T M A Q G V L E L K
```

```
                              130              140              150              160
UniRef90_B2AZG1        K Y I S P G           E V T R F L D Q H L R A R I  G T R L V A E Q H I A L H Y S
UniRef90_X8J738          S L S S H H L V P E Q L D A F M R R M L V S R I  S R R V L A E H H L A L T D G
UniRef90_L8FMH9        R Y I S P G           E V T R F L D E H L K T R I  G T R L V A E H I A L H H W
UniRef90_W4VZ13        E S H D V D I Q T E N S I Q Y F L D R F F M S R I  S I R M L I N Q H T L L F G G
UniRef90_N6TUF7        E S H D V D C H T E H S I Q Y F L D R F Y M S R I  S I R M L I N Q H T L I F G G
UniRef90_L7I4E7        G L         M D P Q E L N G F M N R I L Q S R I  S R R V I A E Q H V T L T Q S
UniRef90_I1C3B0        Q H W K T N   M I D T E I Q Q F L D R F Y M S R I  G I R M L I G Q H S A L Y R G
UniRef90_H9J171        E S H E V D P G T E N S I Q Y F L D R F Y M S R I  S I R M L I N Q H T L L F G E
UniRef90_E9C2W6        E A Y G S D A Y D   R N I Q Y F L D R F Y M S R I  G I R M L I A Q H C E V F G D
UniRef90_B3RPM0        L A K K D Y N L D Q H R L Q Y F L D R F Y T N R M S I  R L L I T Q H N M L F G E
UniRef90_D8QNZ5        A E L G S T T Q L P   E I H Q F L N R F L S R I  G I R M L I G Q H V A L H Q K
UniRef90_A0A015LRF5    K Y M S P       E D I K N F L D D M I S A R I  G I R L I A E Q H I A L H N N
UniRef90_B3RPL9        T V V K N H S L D H S S L Q Y F L D R F Y I N R T S M R L L I T Q H L T L F G D
UniRef90_L2G7U7        G L         M D A E D L D K F M N T I L R S R I  S R R V I A E Q H L A L T E T
UniRef90_T0QL66        Q A M S A A E A D M I D L H S F L D G F Y L S R I  G I R M L M G Q H I A L H E
UniRef90_Q5AQG9        G L L P A E A     M D Q F M N T L L R A R I  S R R V I A E Q H L A L T E T
UniRef90_J5JUX6        G L M N P         Q D L D K F M N T I L R S R I  S R R V I A E Q H L S L T E T
UniRef90_K8EKG3        N E L A E K S K H L P E I H Q F L D G F Y M S R I  G M R M L I G Q H V A L H E P
UniRef90_J3NR39        R Y V R P         E D V T A F L D E H L R A R I  G T R L V A E Q H I A L H F S
UniRef90_E9CEX1        R Y M P V D       K L N R F L D L T L Q S R I  G V R M L A E Q H L A L H N Q
UniRef90_I1CNL9        Q T Y Q S   V V A M N K L D R F M D A T L R S R I  S R R V I T E H H L V L S G
UniRef90_W6MIR8        I L Q S L         P Q A E L D A F M S S M I R S R I  S R R V I I E Q H I S L S K N
UniRef90_U4LFQ8        N L L P A D       E L D K F M H A L L R S R I  S R R V I A E Q H L A L T D T
UniRef90_UPI0003EDEA9D E K F G F D P F I S S N I Q Y F L D R F Y T N R I  S F R M L I N Q H
UniRef90_UPI0004449F12 P Y L P P D Q       L D A F M R R M L V S R I  S R R V L V E H V A L S K S
UniRef90_W2S5K1        D H V A P D V       M D S F V Q A M L R A R I  S R R V I A E Q H L A L S E T
UniRef90_M2N5V2        D S V S A D E C       D R F M T T L L R S R I  S R R V I A E Q H L A L T E T
UniRef90_R7SYV0        P Y L L P D R       L D S F M R R M L V S R I  G I R M L A E H H I A L T R Q
UniRef90_O02623        E S E G V D I A S E R G I Q Y F L D R F Y I N R I  S I R M L Q N Q H L V V F G
UniRef90_C3ZHT9        K H I K       E Y K V I Q E F L D R M L T S R L G I R M L A Q H H I A L H Q E
UniRef90_W5N744        E T F G Q D P L T S Q N I Q Y F L D R F Y M S R I  S I R M L I N Q H T L I F D G
UniRef90_R7Q7P3        E F C G K G   T T D L E I R S F L D R F Y M S R I  G I R V L M S H H L A L G G G
UniRef90_U6IU11        E K H G E D P V I N N Q L Q Y F L D R L F L M R I  S I R M L A S Q H L V F G P
UniRef90_U9T7A6        N H L P P D Q       L D K F M S I M L R S R I  S R R V L A E Q Q I T L T E N
UniRef90_J5JE31        R Y I A P         A D V T R F L D S H L R A R I  G T R L V A E Q H I A L H F S
UniRef90_W4GYZ2        K S M L A S L S D M H D L H T F L D K F Y L S R I  G I R M L M S Q H I A L H E R
UniRef90_D0MQK7        M E L S Q E F A D L S D L H S F L D A F Y M S R I  G I R M L M S Q H I A L H E E
UniRef90_B7PE41        K H I K Q     E E L V K T F L D R T L T S R L G M R M L A E H H I A L R Q D
UniRef90_C1EA66        L E L E R E G N D M P E I H Q F L D G F Y M S R I  G I R M L M G Q H V A L E E A
UniRef90_A0A059LIH5    R E L K S E I G V S D E I H T M L D N F Y M S R I  G I R M L I G Q H I A L H E P
UniRef90_N1J7J2        K Y V N A N       E V S T F L D E H I R A R I  G T R L I A E Q H I A L H A F
UniRef90_A0A024JLQ8    M Y Q S I D S       D K L D K F M S S I L C S R I  S R R V I A E Q H L S L T A N
UniRef90_S2JYQ3        Q H R K   T S M I D S D V Q Q F L D R F Y M S R I  G I R M L I G Q H S A L Y R G
UniRef90_K2S234        G A M K P       E E T D K F M T T L L R S R I  S R R T I A E Q H L A L T E T
UniRef90_A0A024GND2    P A R T V Q F A D L V D I H S F L D A F Y M S R I  G I R M L M G Q H I A L H E E
UniRef90_K3WGE5        A E L S Q E F A D L A D L H S F L D A F Y M S R I  G I R M L M S Q H I A L H E E
UniRef90_V9KZC8        K H I K       D E S I I K Y F L D K T L T S R L G I R M L A S H H L A L H E D
UniRef90_M1VL97        Q S C G M G A   D D I H I S S F L D R F Y T S R I  I R V L I S Q Q V S M S E R
UniRef90_G4TF85          S I S S P H L T P D E L D S F M R R M L V S R I  S R R V L A E H H L A L S E G
UniRef90_Q0UBF1        G L M K P       E E T D K F M T T M L R S R I  S R R V I A E Q H L A L T E T
UniRef90_G2WS49        R H I S P         A D V T T F L D Q H L R A R I  G T R L V A E Q H I A L H Y S
UniRef90_G0SF91        G L         M D A A E L D K F M N T I L R S R I  S R R V I A E Q H I A L T E T
UniRef90_UPI00039592D3 R H I Q         D E R L L R P F L D K T L T S R L G M R M L A A H H L A L H E D
UniRef90_V8NEI3        D S S K M D P C I N H N I Q Y F L D R F Y M N R I  S I R M L I N Q H T F I F D S
UniRef90_R7TIP1        K H I K       D P H M V Q T F L D R M L T S R L A L R M L T E H H L A L H E N
UniRef90_G7YRB5        A Q N K A D P I T N N H I Q Y F L D R F F M M R I  S L R M L L N Q H L L T F G S
UniRef90_U4LTP1        R Y       A T P A E V T S F L D Q H L R E R I  G T R L M A E Q H I A L H I S
UniRef90_K1RCK5        R H I Q       D E E M I R L F L D R M L S R L G I R L L V E H H L A L H D E
UniRef90_M7TR73        G L M P A D       D L D R F M N T L L R S R I  S R R V I A E Q H L A L T E N
UniRef90_W7HY01            D F V P A A E L D S F L R T M L K S R I  S R R T I A E Q H V A L T D T
UniRef90_Q1JPJ6        D T Y G D D P V V S N Q N I Q Y F L D R F Y L S R I  S I R M L I N Q H T L L F D G
UniRef90_Q6C089        M D Q L I E P K R L D D V   M S L M L R S R I  S R R V I A E Q H I S L S Q S
UniRef90_F0XD18        G L M G P G       D L D K F M N T I L R S R I  S R R V I A E Q H L A L T E T
UniRef90_M3AVV3        D S I S S D E C       D R F M I N L L R S R I  S R R T I A E Q H L A L T H T
UniRef90_R7Z0X6        R K R Q R M Q   I D H N I Q S F L D R F Y M S R I  G I R M L I G Q H I A L T D Q
UniRef90_V4AEU8        K H I K       D E N L I K G F L D K T L T S R L G I R M L A E H H L G L H I E
UniRef90_D8TV14        D K V L V G P C   L Q M D A F F D S M L R S R I  S R R V I A E Q H L H I   G N
UniRef90_D8PNK5        P Y M S P D A       L D A F M K R M L V S R I  S R R V L A E H H I A L T N N
UniRef90_F0XFD8        K Y I S P       A H V T A F L D E H L R A R I  G T R L I A E Q H I A L H L S
UniRef90_A5DC50            I L D S L N Q N D L D Q F M S S M I R S R I  S R R V I V E E H L S L T D N
UniRef90_W5M4H0        K H I Q E E A V       V R Q F L D K T L T S R L G I R M L A T H H L A L H E D
UniRef90_W5KJL0        K H I Q       D E T L V R N F L D T T L T S R L G I R M L A T H H L S L H E E
UniRef90_A8NXL3        L S L S S P F L S P D K L D S F M R R M L V S R I  S R R V L A E H H I A L S K T
UniRef90_B0CYD1        P Y L       P P E K L D A F M R R M L I S R I  S R R V L A E H H I A L S E
UniRef90_M7C3S7        E S F G V D P V T C Q N V Q Y F L D R F Y M S R I  S I R M L L N Q H S L L F G G
UniRef90_Q0TY37        R K R Q R M Q   I D H N I Q A F L D R F Y M S R I  G I R M L I G Q H I A L T D Q
UniRef90_V9CZN3        R K Q Q R M Q   I D S S I Q S F L D R F Y M S R I  G I R M L I G Q H I A L T D Q
UniRef90_S2JZM1        A Y Y P P E Q       K D L D L F L N R M L S R I  S R R V L A E Q H L A L T E A
UniRef90_F9XI76            D Y V S S E E C   D R F M T T L L R S R I  S R R V I A E Q H L A L T D T
UniRef90_UPI00044161CD   S L A S P Y M E P E A L D A F M R R M L V S R I  S R R V L V Q H H I A L S   Q
UniRef90_B8NGP6        R Y I         D P T E V T R F L D T H L R A R I  G T R L I A E Q H I A L H F A
UniRef90_U1HZ72            D L V H P Q M M E D F I N T M L R A R I  S R R V I A E Q H L A L T E T
UniRef90_A7SER7        Q H V S Y E T M G N       L D R T L K S R L G I R M L A R H I A L R F E
UniRef90_UPI0004623211 L S L S S P Y L L P D R L D T F M R K M L V S R I  S R R V L A E H H I A L T Q F
UniRef90_W9CLG0        R K R Q R M Q I D N   N I Q S F L D R F Y M S R I  G I R M L I G Q H I A L T D Q
UniRef90_G3B5Z7        I L Q K     F P Q E E L D R F M S S M I R S R I  S R R V I V E E H L S L T E N
UniRef90_UPI0004623014 R Y L         T P E Q I S E F L D S T I R N I A V R L L A L I A I S R D
UniRef90_F6PXB7        S P K C F P V V N L L T C I F G C R N F I S S L V F Q L L T H Q L S L L F G G
UniRef90_L8X9S3        S L S S H Q M V P E Q L D A F M R R M L V S R I  S R R V L A E H H L A L T E G
UniRef90_T1EG60        L K L L D D P L S D E T V Q Y F L D R F Y M N R I  S V N M L I E T H I S L F S
UniRef90_M2RQJ0        P Y L S P D R       L D S F M R R M L V S R I  S R R V L A E H H I A L S K T
UniRef90_T1H7F7        E S Q G V E P S L E T S I Q Y F L D R L Y M S R I  S I R M L I N Q H T L L F G G
```

```
UniRef90_B2AZG1           S  S  P  H
UniRef90_X8J738           L  A  Q  G  D
UniRef90_L8FMH9           S  Q  A  H
UniRef90_W4VZ13           Q  L  N  G  H
UniRef90_N6TUF7
UniRef90_L7I4E7           F  R  N
UniRef90_I1C3B0           P  F  T  R  N
UniRef90_H9J171           Q  L  G  G
UniRef90_E9C2W6           D  P  A  L  N
UniRef90_B3RPM0           E  N
UniRef90_D8QNZ5           N  P  P  G
UniRef90_A0A015LRF5       L  N  D
UniRef90_B3RPL9           E  E  P
UniRef90_L2G7U7           Y  Y  S  P
UniRef90_T0QL66
UniRef90_Q5AQG9           F  N  S  P
UniRef90_J5JUX6           Y  H  S  P  H
UniRef90_K8EKG3           P  K
UniRef90_J3NR39           S  A  P  H
UniRef90_E9CEX1           Q  P
UniRef90_I1CNL9
UniRef90_W6MIR8           F  R  E  G
UniRef90_U4LFQ8           F  N  S  P
UniRef90_UPI0003EDEA9D
UniRef90_UPI0004449F12    F  A
UniRef90_W2S5K1           Y  N  S  P
UniRef90_M2N5V2           F  H  S  P
UniRef90_R7SYV0           V  N  S  H
UniRef90_O02623
UniRef90_C3ZHT9
UniRef90_W5N744           T  T  N  P
UniRef90_R7Q7P3           Q  P
UniRef90_U6IU11           E  L  N  K  H
UniRef90_U9T7A6           W  N  D  H  G
UniRef90_J5JE31           S  Q  E  H
UniRef90_W4GYZ2           E  N
UniRef90_D0MQK7           E
UniRef90_B7PE41           R  P  N  H
UniRef90_C1EA66           A  A  T
UniRef90_A0A059LIH5       Q  K  E  H  H
UniRef90_N1J7J2           S  H  S
UniRef90_A0A024JLQ8       Y  K  N  G
UniRef90_S2JYQ3
UniRef90_K2S234           F  H  S  P
UniRef90_A0A024GND2       E
UniRef90_K3WGE5           E
UniRef90_V9KZC8           K  P  D
UniRef90_M1VL97           S  R  Q  G
UniRef90_G4TF85           F  A  Q
UniRef90_Q0UBF1           F  N  S  P
UniRef90_G2WS49           S  Q  P  H
UniRef90_G0SF91           F  N  S
UniRef90_UPI00039592D3    K  P  D
UniRef90_V8NEI3           S  N
UniRef90_R7TIP1           K  P  N
UniRef90_G7YRB5           E
UniRef90_U4LTP1           S
UniRef90_K1RCK5           K  A  N  H
UniRef90_M7TR73           F  N
UniRef90_W7HY01           Y  N  S  P
UniRef90_Q1JPJ6           R  T  N  P
UniRef90_Q6C089           F  N
UniRef90_F0XD18           F
UniRef90_M3AVV3           F  H  S
UniRef90_R7Z0X6           K  Q
UniRef90_V4AEU8           K  P  N
UniRef90_D8TV14           K  R  P  G
UniRef90_D8PNK5           F  N
UniRef90_F0XFD8           S  R  P
UniRef90_A5DC50           Y  K  T
UniRef90_W5M4H0           K  A  D
UniRef90_W5KJL0           N  P  D
UniRef90_A8NXL3           Y  L  A  K  D
UniRef90_B0CYD1
UniRef90_M7C3S7
UniRef90_Q0TY37           R  A  R  S  D
UniRef90_V9CZN3           T  T  N  K  H
UniRef90_S2JZM1
UniRef90_F9XI76           F  H  A  P
UniRef90_UPI00044161CD    S  L  A  G  H
UniRef90_B8NGP6           S  Q  P
UniRef90_U1HZ72           F  D  S  P
UniRef90_A7SER7           K  P  N
UniRef90_UPI0004623211    V  K  S  R  H
UniRef90_W9CLG0           S  H  D  K  D
UniRef90_G3B5Z7           Y  M  S
UniRef90_UPI0004623014    L  A  R  G
UniRef90_F6PXB7           D  T  N  P
UniRef90_L8X9S3           L  A  Q  G  D
UniRef90_T1EG60
UniRef90_M2RQJ0
UniRef90_T1H7F7           N
```

Position markers: 1, 10, 20, 30, 40

```
UniRef90_S3C043              L D D W V A R A G R P L S V R Q L M H F G R S L L S S A N Y V R T E L P
UniRef90_S7RWJ3             R Q L E L Y A S K Q T K R L T L R Q L V F F G R S L I Q S G N Y V R T E L P
UniRef90_K5XXR7             R H L E T Y I S K T T Q R L T L R Q L V F F G R S H L I K S A N Y V R T E L P
UniRef90_UPI0004417DC9       K Q L E L Y A R R D A Y P L T L R Q L V Y F G R S L L Q S A N Y V R K E L P
UniRef90_E5SBS9         I G R K I D D Y A Q F R P S A L S M Q S L V D F G I A L F F R C V V I L K E L L
UniRef90_E4WQJ0        L T K N V D K Y S K Y S P S P L S V Q Q F L D F G D N E Q K S F E Y L R Y E L P
UniRef90_G1TKK4        I Q S Q V D F Y T C L S P S R L S M K Q F L D V N A C E K T S F L F L P E E L P
UniRef90_T1EFD5        I A D D I E R Y S Q L Q P T A L T L Q N Y I D F G K S E L N S L D Y L M K E L P
UniRef90_D8TIN2                 G V S L K Y L L D F G T Q P L E S A R F L H A E I P
UniRef90_UPI000455ED67      K Q L D L Y A A K E A H R L T L R Q L V F F G R S L I K S A N Y V R T E L P
UniRef90_F4NWT5            Q I K A F S V L P Q T S V S L K Q M V L F G R Q P L H G T Q F V H H E L P
UniRef90_UPI00022350DD  A P K Y I E H F S K F S P S P L S M K Q F L D F G T E R R E A A A G C H S A V G
UniRef90_UPI0001CBB202        R L S P T T L L Y S G K S P D G N H I L R S A Q Y L H K E L P
UniRef90_N4W0M0                                   S R L L S S A N Y V R T E L P
UniRef90_S2IWB6             K I T H F A S K Q V N P V T L G K L A G F G R P P L S N E Q Y A R T E L P
UniRef90_H6BSX6        L M Q T I S H Y A S F P P T G V S L R Q M V Q F G E K P S T A S Q F L S E E L P
UniRef90_G7E3G3        V S S H V E P F A A R K A F P I S L R Q L I F F G R K L V T A G N F I R T E L P
UniRef90_G4V9U6        L G K M I E H Y S K F T P V S L S L K D L L L F G E P A S K S F D F L K Y E L P
UniRef90_R7YMI8                     L T F F G R T L T E A R L L S S A N Y V R T E L P
UniRef90_M5G7C1            R Q L E L Y A S K R S K P L S L R Q L I F F G R S L I Q S A N Y V R T E L P
UniRef90_F9FWM1        L M D T I R H Y A R F P A T G V S L R Q M V Q F G E K P S R A S Q F L A E E L P
UniRef90_D5GER0                 L H P R P V E L K G L S S F G R P P L T S A R F T R E Y L P
UniRef90_D7FPX6           D I M E S A A R K Q T G V S L K T L I D T G R G D L L S A S F L H R E L P
UniRef90_R8BW16        L M D T I R H Y A S F P A T G V S L R Q M V Q F G E R P S R A S Q F L A E E L P
UniRef90_S0EBU9                                 A N F A L S L L P
UniRef90_I0Z077            I E K Y A L Q D I E A L S L Q Q M L E F G R K I L T S A R H A Q R E L P
UniRef90_D2W0E3          V Y D F A K Q P P S S I S L K M I M N F G Q T L L T S S D W L K E E L P
UniRef90_UPI00042C63D0       E M A R E R S K T V T Y N Q S A I D V A A E K K S A R Y L Q Q E L P
UniRef90_UPI0004560C10  P D L L S R Y L N L S P A P L T L R Q L M A Q G K P L A S A Q H T Q R E L P
UniRef90_F4RVP2           H I F R Y A A M D S I P F S L R Q L I F F G K R L V R G A N F I R V Q L P
UniRef90_X8JHX6        V T E K L A H Y A S F P Q T P V S L H Q M V A F G R K V L R A A K F L A D E L P
UniRef90_M5E6Y3          M D L L T R A L E K T P R P I T L P Y L L A Q G G R P L T S A R F T Q Q E L P
UniRef90_E9DS73                 S P S P I C R R H G Q Q Q Q S R K A S N G A W R P V S V L
UniRef90_A8J1W3                                L L S A R F L H A E I P
UniRef90_A6R2Q7        L M E T I R H Y A S F P A T G V S L R Q M V Q F G D R P S T A S Q F L S E E L P
UniRef90_UPI000359F61B                         R S C Q Y L H K E L P
UniRef90_C4XVV9            E V L M K Y S K Q K P H P V S L R Q L A G Y G K T L T K S A N F V R I E L P
UniRef90_G7DZJ4             R H F E A R V P R A I T L K E L A R F G R P P L S E G E Y T R A E L P
UniRef90_A8PVB4          L L A R S L E N T P Q P I T L P Y L L A H G D E L L R S A K Y T Q Q E L P
UniRef90_H1W1L9         H V S N I A R H G R P P L S E K S L        L S S A N F T T L S L L P
UniRef90_E9CED2            I E E Y A R K K P T R L S I R Q M L H F G R R L I E A A R Y L H R E M P
UniRef90_Q4SMY8          K I E Y Y S K F S P S P L S I K Q F L D F G R C E K T S Y M F L R K E L P
UniRef90_W1QEG8             W S E R D A H P V T L R H L A N F G K K L T S S A N F V R T E L P
UniRef90_F7VPX1        L M D T I R H Y A S F P A T G V S L R Q M V Q F G E K P S T A S Q F L A E E L P
UniRef90_UPI0004407D1C      R Q L E L Y A S K E T K R L T L R Q L I F F G R S L I M A A N Y V R S E L P
UniRef90_UPI0001D5660E  V P K Q I E R Y S R F S P S P L S I K Q F L D F G R C E K T S Y M F L R K E L P
UniRef90_C5MC72               E Y S K K Q P H P V S L R Q L A G Y G N T L T R S A N F V R I E L P
UniRef90_U7PLK4                                R L I S S A N Y V R T E L P
UniRef90_I1CM47                                R L V T S A N W V R N E L L
UniRef90_W2SAL7             I S H Y A S F P P T G V S L R Q M V Q F G E K P S T A S Q F L S E E L P
UniRef90_G8YID9           E V L S S Y L R K E A H A V S L R Q L A G Y G K T L T K S A N F V R L E L P
UniRef90_D8PW65        L T Q L L A A Y A S S P S R T I N L S E L L S F G R P L L K S V S Y V L A E I P
UniRef90_UPI000383B6DF   P R F S R T L G A F P A A P V C T Y S R G Q H P Q C E K T S Y M F L Q K E L P
UniRef90_S2J2J7            K I K Y F A K F P Q T G V S M Q M M F G Q K P S K A S Q F L H E E L P
UniRef90_UPI0003EAB5AF  V P K H I D H F S K F S P S P L S M K Q F L D F G H S A
UniRef90_L8X0M5        M A A L L S E Y E Q L P P R P I P L K T L R G F A N P P L E S A S Y V R A E L P
UniRef90_M2RIP7        V T R L M E E H A K H P P R A L T L G T L L T Y A R P P L A S V G Y V F A E I P
UniRef90_UPI0004417011  L T A L L T K F A E Q R S N P L T L S A L L S F A D P L L A S A R Y V H S E I P
UniRef90_S9X4M2        V P R E V E H F S R Y S P S P L S M K Q L L D
UniRef90_E1ZBW9             V E T W A T K P V R K L T L Q K L L N F G R R V L D S A R F V Q Q E L P
UniRef90_U1GH00            I S H Y A F P A T G V S L R Q M V Q F G E K P S T A S Q F L S E E L P
UniRef90_J4H3A0        L S R M E E V R K Q P P R P L V L S D L L S F A D P V L A S V G Y V F A E I P
UniRef90_S7QEK7        L A A L L E K H S Q R P P T P L T L A T L L S L G R P P L K S V S Y A Q A E I P
UniRef90_J3Q423           H V L R Y A E M E A A P F S L R Q L I F F G K N L M Q G A N F T R V Q L A
UniRef90_K5VW46        I A P L L D E Y A K H P P R P L T L S T L L S F G R P L L N S V E Y V L S E V P
UniRef90_A8PN19        V V E K L K Y Y E R F R P H P I S L K M Y L G F G Q T V E I S F K F L Q K E L L
UniRef90_G0SVG6            L I E S F A A K S S T P I S L K H M I N F G E K L I K G G N F L R T E L P
UniRef90_E9H8D3                R L T P Y M I L Y S G K S H D G S H L L K S A Q Y L W K E L P
UniRef90_A5E1I7             D F L K K K P H P V S L R Q L A G F G Q K L I N S A N Y V R I E I P
UniRef90_W7TC29        D I N T Y S C K R Q T G V S L K T L L D T G R M L Q Q V A C F L H R E L P
UniRef90_G4U344              Y K S L K P R P T P L S T L L S F G S P L T P S A S Y V L E E L P
UniRef90_C4R4B6         M L L H W A E R N A H P V T L K H L A N Y G R T L N K S A N F V R N E I P
UniRef90_A0A024JB53     T R L I A H Y A R F A P T P L S L A Q M A Q F G K T A S T A A Q F M S D E L P
UniRef90_F4P6R3           R I E E Y A A K S L N L V T L Q Y L L R L R E R R G L A E V V L Y E L P
UniRef90_R1FC28                    M T R R Q R T L I Q I A T F L K R E L P
UniRef90_H8WWH7            I F H Y S R K P L P Q L S L G Q L Y K Q S E K L S S A R E T I E H L L
UniRef90_B8P4M5        L S R L M E E H A E Q P P R P L T L S T L L S L A D P V L T S V R Y V T N E I P
UniRef90_K1X8M6        L M D T I K H Y S G F P A T G V S L R Q M V Q F G E K P S T A S Q F L S E E L P
UniRef90_H3AKR9               R L T P T T M L Y S G K S P D G S H L L K S A R Y L H M E L P
UniRef90_M7BEE1                           C E R T S F A F L R Q E L P
UniRef90_J3PHH0        L M D T I R H Y A S F P A T G V S L R Q M V Q F G E K P S R A S Q F L A E E L P
UniRef90_F2TXM9          L A R S A K Y Q I S R L S L A Q L L T F G Q M E N Q S C Q F I Q N E G V
UniRef90_M0VNX0                             R N L L S A Q F L H K E L P
UniRef90_A9UQV4           E Q L A A Y S K Y K I N R L S L Q A L L D F G K R L M Q S C N F I H T E C P
UniRef90_L8G7C6        L M E T I K H Y S A F P A T G V S L R Q M V Q F G E R P S R A S Q F L S E E L P
UniRef90_K3VH56        L M D T I R H Y A R F P A T G V S L R Q M V Q F G E K P S R A S Q F L A E E L P
UniRef90_K9HUZ2        V S E L L S R Y N D V T P R P F N L S Q L L S F G R P V T S S V S Y A L A E L P
UniRef90_W3WWY4        L M D T I R H Y A N F P A T G V S L R Q M V Q F G E K P S T A S Q F L A E E L P
UniRef90_M7WCR3           L L G H Y A S S P T R T V T F D D L Q Q Y G R P P L Q S A E R T R Q E L L
UniRef90_C0S8E4
UniRef90_M2Y3I9            V A R Y A K K E P K K H T I N Q L I Q F G K K L I Q S A R F V H Q E L P
UniRef90_F4P5Y5        R V L E K Y V E Q E V K R V T L R Q L S V F G R K V L R S A N Y I R T E L S
```

```
                              50              60              70              80
UniRef90_S3C043        T R L A H R I R D M Q Q L P Y A V V S N T H I H D V Y E L Y Y S A F D T F R K V
UniRef90_S7RWJ3        V R I A H R I R D L Q A L P Y V V V T Q E G V A R V Y E L Y W S A F E K F R R Y
UniRef90_K5XXR7        V R I A H R L R D L Q N L P Y I V V T Q E G V S K V Y E L Y W S A F E K F R R Y
UniRef90_UPI0004417DC9 V R I A H R L R D I Q A L P Y V V V T Q E G V G K V Y E L Y W A A F E K I R R Y
UniRef90_E5SBS9        V R L A N I M K E V E L L P S Q L M E T P S T K L V Y Q W Y Q E S F Q E L L Q Y
UniRef90_E4WQJ0        T R L A N M L K E M N R L P K E L L T T P S F E S V K K M Y E E T L G E V L I F
UniRef90_G1TKK4        V R L A A I M K I S L L P D N L L R T P S V Q L V Q S G S I Q S L Q E R P D F
UniRef90_T1EFD5        V R F S N I M R E F Y L L P P Q L L E T S S R T L Q G W Y E Q S F F E L M Q M
UniRef90_D8TIN2        I R L A H R L M D L N H L P P K L S E E P H V R R V K G W Y A E S F A D F R S F
UniRef90_UPI000455ED67 V R I A H R I R D L Q A L P Y I V V T Q E G V A K V Y E L Y W L A F E K F R R Y
UniRef90_F4NWT5        V R L A H R V E E S L P Y E L S K M S S I S T V K D W Y T Q S F Q D L I E F
UniRef90_UPI00022350DD I R S S L E E T T L G P R N R S G P G L V P H P G Y V Q S L L D I M E F
UniRef90_UPI0001CBB202 V R V A H R I V A F R G L P F I V G C N P T I L Q V H E L Y I R A F H L T S E F
UniRef90_N4W0M0        T R I A H R I R D M Q Q L P Y V V V T N S H I K E V Y E L Y N A F D M F R K V
UniRef90_S2IWB6        V R L A R R V R A F Q S L P F I V G T N P Y I K E I Y S L Y Y D S F E S L V K Y
UniRef90_H6BSX6        V R L A H R V E E I T T L P R P E L D S E T R K R L L G N T R R Y F A P L D D G
UniRef90_G7E3G3        V R L A H R I K D L E V L P Y V V G S N P V I K P V F E R Y V D A F E R I R T Y
UniRef90_G4V9U6        V R L G N I M Q E I H L L P D V L R K S R S I Q Q I C L L Y E E T F N S I I K Y
UniRef90_R7YMI8        T R I A H R L R D M Q T L P Y V V V T N P H I S H V Y E L Y Y K A F D R L R R
UniRef90_M5G7C1        V R L A H R I R D L Q T L P F V V V R Q E Q V A K V Y E L Y W T A F E R V R S Y
UniRef90_F9FWM1        I R L A H R V Q E L D E L P S D I R N N P S I G K A K A S A R R Y F A I V D D S
UniRef90_D5GER0        V R L S R R I R A L R N L P Y I I V S N P N I S T I Y N N Y I D S L T A I L A F
UniRef90_D7FPX6        I R L A H R V R D L E S V P D M L A Q K S V Q Q V R E W Y V I S Y E E I R K F
UniRef90_R8BW16        I R L A H R V Q E I T T L P R P Q L E N I H I S E A Y H A A R R Y F A M V D D T
UniRef90_S0EBU9        V R L A H R I Q A L R N L P Y I V V A N P N I S R I Y N N Y L H S L S I L L P Y
UniRef90_I0Z077        K R L A R R L M D L Q F L P Y I V V T N P H I K R V Y D A Y Y H A F N T L R N M
UniRef90_D2W0E3        K R L G R Q I R Q L D N L P K G L N L M P S V R L V R D W Y M A S F N D L Y Y
UniRef90_UPI00042C63D0 V R I A H R I K G F R S L P F I I G C N P T I L H V H E L Y I R A F Q K L T D F
UniRef90_UPI0004560C10 I R L A R R V G G F R A L P F I V G S N P F I S K I A R L Y A G S F E T I A K F
UniRef90_F4RVP2        I R I A R R I R D F Q S L P Y I V A S N P H L T D A L Q L Y V D A F D K M R S Y
UniRef90_X8JHX6        I R L A H R I R D I D N S A H D L G K S P S F A T V R N W Y L Q S F E E I S S F
UniRef90_M5E6Y3        V R L A R R V R Q F Y S L P F I V G T N P Y I Q E V A R L Y A W S F A Q L S Q V
UniRef90_E9DS73        D E I A H R L R D M Q Q L P Y V V V T N P H I S E V Y D L Y Y K A F D Q F R K L
UniRef90_A8J1W3        I R L A H R L K D L S N L P E A L S N E P H V R R V K G W Y T A S F A D F R S F
UniRef90_A6R2Q7        I R L A H R V Q E L N E M P S I R S S T T S I L R A N G T N K R Y F V S T D D G
UniRef90_UPI000359F61B V R I A H R I N G F R N L P F I V G C H P T L L S V H E L Y I R A F H I L S D F
UniRef90_C4XVV9        I R L A M R I R D L Q T L P F G V V N N F H L A Q I Y E S Y Y H S F N A F R K I
UniRef90_G7DZJ4        H R L A R R V K A H Q T L P Y I V G S N P S I A R I F E L Y Q S S F E L L T S F
UniRef90_A8PVB4        V R L A R R V R Q F Y S L P F I I G T N P Y I Q E V A R L Y A S S F Q Q L A E F
UniRef90_H1W1L9        I R L A H R I Q A L R N L P Y I V V S N P N I S R I Y N N Y V H S L S T L L P W
UniRef90_E9CED2        T R L A H R L W S L Q H L P F I V G R N P Y I Q S V Y E S Y A L A F R R L I G F
UniRef90_Q4SMY8        V R L A N T M K E V N L L P D K L L G Q P S V R L V Q K W L Q V S L L A V P Q L
UniRef90_W1QEG8        V R L S L K I R E L Q S L D Y S V I N N H H I N L V Y Q S Y Y H C F N A F R K M
UniRef90_F7VPX1        I R L A H R V Q E I T Q L P R P H L A N P S I E E G Q S A S R R Y F A M V D D T
UniRef90_UPI0004407D1C I R I A H R L R D M Q A L P F I V V T Q E D V A R V Y E L Y W T A F D K F R A F
UniRef90_UPI0001D5660E V R L A N T M R E V N L L P D N L L N R P S V G L V Q S W Y M Q S F L E L L E Y
UniRef90_C5MC72        I R L A L R I R D L Q T L P F G V V N N F H L A Q I Y E S Y Y H S F N A F R K I
UniRef90_U7PLK4        T R L A H R I R D I Q Q L P Y A V V S N P H I S A V Y E L Y Y N A F D M F R K V
UniRef90_I1CM47        I R L A H R I R D F Q Q L P F L V G T N P H L E Y V Y Q L Y W G A F E S F R K F
UniRef90_W2SAL7        V R L A H R V E E I T D L P D R L L S P P K T S S N R S N S R R Y F A A I D D G
UniRef90_G8YID9        I R L A L R I R D L Q T L P F G V V N N F H L A Q I Y E S Y Y H S F N A F R K I
UniRef90_D8PW65        R R L A T R V R T I E G L P F I V G T N P Y V S G V L A A Y K E S F L S L A T H
UniRef90_UPI000383B6DF V R L A N T M R E V N L L E D L L N N P S V E L V Q S W Y M Q S F L E L L E Y
UniRef90_S2J2J7        I R L A H R V K E L E E L P R N L S K M P S L A R I I K P T Y N S L H P S V P I
UniRef90_UPI0003EAB5AF V V M T F P H G R A E R R Y V Q S L L D L L E F
UniRef90_L8X0M5        R R L V Q R V R A L D S L P F I V G M N P F I M R T H K L Y H S S F E R L A T F
UniRef90_M2RIP7        R R L A L R A S L E A L P F I V G M N P F I A R T L E A H R R S F Q F L T S H
UniRef90_UPI0004417011 R R L A S R V Q S L E L P F I V G T N P Y I E H I R D A H R R S F E V L A K H
UniRef90_S9X4M2        F A H L P F Y R Y I Q S L M E L V E F
UniRef90_E1ZBW9        K R L A R R L M D L Q L L P F I V V H N P N I K K V Y N A Y Y H G F T T L R D L
UniRef90_U1GH00        I R L A H R V E E I T T L K R P E L D K D T R N R L L S N S R R Y F A H I D D G
UniRef90_J4H3A0        R R L A L R A S L E A L P F I V G M N P F I A R T L Q A Y R R S F Q L M T S Y
UniRef90_S7QEK7        R R M A Q R V M S L Q A L P F I V G T N P F V A R V L E G H R T S F L W L A S Q
UniRef90_J3Q423        I R L A R Q I R E F Q S L P Y I V T S N P Y L T E T Y Q I Y A E A F E K I R S Y
UniRef90_K5VW46        R M F G L R V R A F E E L P F I V G V N P F L A R I L A N H R K S F K A I A T Y
UniRef90_A8PN19        V R L A N I S K E I D S L L Q N L P Q L S S T T D V C K L F Y Q S F E D L L P F
UniRef90_G0SVG6        T R L S R R I R D L Q E L P L G V A S H P R M A H V Y D L Y E A F E G I R T F
UniRef90_E9H8D3        V R I A H R I H E F R S L P F I I G C N P T I L E V H E L Y I R A F N I L N N H
UniRef90_A5E1I7        I R F A I R I R D L Q T M P F G V V N N Y H L A Q I Y E S Y Y H L F N A F R K I
UniRef90_W7TC29        I R F A H R V R D L D A I P V M R E M P S I Q L V K T W Y V T S F H E I R N A
UniRef90_G4U344        R R L V Q R V R S M E A L P Y I V G M N P F I A R T L E S Y R Q T F Q D L A T A
UniRef90_C4R4B6        V R L A L R I K S L Q K L P F D V V N N F H F A Q V Y E C Y Y H C F N S F R K Y
UniRef90_A0A024JB53    V R I A H K V H E L E N L P P E L V Q T P S I Q R V L G W Y V A S F Q D I L R M
UniRef90_F4P6R3        I R L A H R V R A I Q N L P F L V G V N P W I R D V Y E L Y L D S F E Q L S L L
UniRef90_R1FC28        V R L A R R V I E L K Q L P E G L D A M P S V I R V R E W Y E Q S F V E I R R S
UniRef90_H8WWH7        I Y N A R R L R E F R S L P Y L V V L N P S I S E S Y D S Y L Q S M S A L L K A
UniRef90_B8P4M5        R R M A M R A R S L E A L P Y I V G M N P F I A R T L E A Y R K S F R F L T T Y
UniRef90_K1X8M6        I R Y A Q S F E E I T Q L P R P N L Q N P S V E R G Q S W Q R R Y F A T V E D S
UniRef90_H3AKR9        V R I A H R I K G F R N L P F I I G C N P T I L Q V I V E F F F F F Q K L S I
UniRef90_M7BEE1        V R L A N I L R E I D L L P N Q L L S T P S V Q L V K S
UniRef90_J3PHH0        I R Y A Q S F E E I T I L P R P T L E N P S I E E I Y N S Q R R Y F A M V D D Y
UniRef90_F2TXM9        I R L A H M L K E M R T L P D D F L D E Q H I R R V Y N V Y L E S F R D L H E A
UniRef90_M0VNX0        I R I A R R A L D L E S L P F L G S A K P A I L K V R D W Y L D S F R D L R Y F
UniRef90_A9UQV4        I R L A H M L K E M R T L P D V V L S Q P L I N R V Y N W Y L S F K E L I D Y
UniRef90_L8G7C6        I R Y A Q S F E E I T A L P R P E L S N P S V P K G K G L S R R Y F A T V E D T
UniRef90_K3VH56        I R Y A Q S F E E I T Q L P R G L Q N N N S K N K G L T R R Y F A V V D D S
UniRef90_K9HUZ2        R R L A T R V R A L E T L P F I V N P Y I A K T L H A H R Q S F A W L A T H
UniRef90_W3WWY4        I R Y A Q S F E E I T T L P F N N G N G S S A G R K Q Q A A R R Y F A M V D D S
UniRef90_M7WCR3        A G L A R R V S Q H L S L P F L P A T N P S L A K V H N L Y S S A F T N L T L V
UniRef90_C0S8E4        T R I A H R L R D M Q K L P Y V V V T N P H L S L V Y E L Y Y K A F E K F R N V
UniRef90_M2Y3I9        V R L A H R I I D L R S L P Y Y V V C G P I K R I Y D L Y V E A F E S V R N F
UniRef90_F4P5Y5        V R L A H R I S R F Q Q L P F V V G T N P H I E F I Y N L Y W E A F E T F R S M
```

```
                                              90                100               110               120
UniRef90_S3C043         K    E I K T L D D N D T F C K V I G H T L Q A H L P V I P K L A M G I L L E S S
UniRef90_S7RWJ3         P    E I I T T L S D N E A F C A F L R D I L E E H A A V I P S         L S L G
UniRef90_K5XXR7         P    P I I T T L S E N D K F C T F L V N G L V N E H A T V I P N L S L G L S L S S
UniRef90_UPI0004417DC9  P    E V R S L S E N D A F C T F L Q D L L G E H R A V I P L L S L G L S L S S
UniRef90_E5SBS9         E N A N A   D E S T L R D F S R Q L S R V L K R H N T V V E T M A E G L M E M K
UniRef90_E4WQJ0         E K A D V N D A E V R Q D F L K S L H G I V N R H R N V V E Q V A Y S V M E Y K
UniRef90_G1TKK4         K D K S I E D A K A V Y D F T D T V I R I R S R H N D V T P T M A Q G V I E   Q
UniRef90_T1EFD5         K R L P L N D E K S I D K I N D G L D F I R N R H T T V V E T M A E G I L E L K
UniRef90_D8TIN2         P A   I K D H L D V L R F T A M L K K A F R R H N N V V P A I A K G V E E Y K
UniRef90_UPI000455ED67  P    P V M N L E D N Q K F C E F L E N I L N E H A P V I P S         L S L G
UniRef90_F4NWT5         P T P P Q E V K A V K F S E C I E K I K R R H D P T T T T V A Q G I I E L K
UniRef90_UPI00022350DD  L D K D P E D H H T L S Q F T E A L I T I R N R H N D V P T M A Q G V L E Y K
UniRef90_UPI0001CBB202  P    P I R D F E D E Q K Y S Q M V R G L L D D H K D V V T M L A E G F K E S R
UniRef90_N4W0M0         K    E I K T L E D N E E F C K S I A Q M L K A H L T V I P K L S M G I L E S R
UniRef90_S2IWB6         A L   P D A P G D D V E F I E K L D K F V E R H S D N I P T L A R G F L E C K
UniRef90_H6BSX6         K E W P P V L A D Y N R K F A R M L E I I K R R H D P V V T T V A Q G I N E W K
UniRef90_G7E3G3         P V   I R T F E D N L Q F C E F M K G L L E E H L V I I P L L A R A L Q D
UniRef90_G4V9U6         G E C S T K S P S T V S R F T D D V D L I L Q K H S R V V E V M A S G I K E I Q
UniRef90_R7YMI8         I S E I K T V D D N D R Y C K V I T E T L K E H L S V I P R L A M G V L E I Q
UniRef90_M5G7C1         P    P I H D L H D N E R F C E F L Q Q I L D E H A A V I P M L S L G F
UniRef90_F9FWM1         S D W P A D L H L Y N Q R F A Q T L H H I K R R H D G V V T T M A Q G I L E Y K
UniRef90_D5GER0         P A G S L T N L T E E S K F T E L L T E I V K T H S N T I P I L A K G F L E C R
UniRef90_D7FPX6         P R P V T V D E E V   R F A E L L K G I Y Q R H A P V L L T M A R G V W E L R
UniRef90_R8BW16         G D W P P E L H L Y N Q R F S Q T L H K I K R R H D G V V T T M A Q G I L E Y K
UniRef90_S0EBU9         W H R P I S T L E D E I R F T N V L A E L V A T H T D T I P I L A R G F L E C R
UniRef90_I0Z077         P Q   V Q T A A D N D K L T Q V L Q R L V D E H A P M L D A L A A G F R E C C K
UniRef90_D2W0E3         Y S K K P K T F E E E L Q F T K M L E G V Y T R H N P T L I S V A K G V N E L K
UniRef90_UPI00042C63D0  P    P I K D Q A D D A Q Y C Q L V R Q L L D D H K D V T L L A E G L R E S R
UniRef90_UPI0004560C10       G P I Q T Q E D N V K F T A V L E D L V S A H A Q N I P T L A R G F Q E S K
UniRef90_F4RVP2         P    P I T D Q Q D N Q S W C E F L E D L L N Q H R I V I P Q L A I G I A E S S
UniRef90_X8JHX6         P T W T P E L L E L N S R F I K V L E R V R R R H D P T V Y R V A Y G V R E F L
UniRef90_M5E6Y3         K    P I E T L D D N D R F V E L Q K L V N D H S E V V P T L S R G F L E C G
UniRef90_E9DS73         K    E I K T L E D N D R L C D I I R H N L R S H L T V I P K L A M G I L E C G
UniRef90_A8J1W3         P A   I K D G V D C V K F T A M L S N A F R R H N N V V P A I A K G V E V Y K
UniRef90_A6R2Q7         Q D W P P E L N E Y N N R F S K T L H H I K R R H D G V V T T V A Q G I L E Y K
UniRef90_UPI000359F61B       G P I R D L D Q E R Q W S E A L R N L L D D H K D V V T T M A E G F S E C R
UniRef90_C4XVV9         P Q V T   T L S E N D E F C R K I S T L L D Q H V F N L S H L M M G A L E
UniRef90_G7DZJ4         P    R I S S Y E D F E K F T S A L N D T V E L H S S N I P V L A Q G F Q E C K
UniRef90_A8PVB4         S P V H T L E D N D R F A Q K L R L L V E E H A D L V P T L A R G F M E C K
UniRef90_H1W1L9         W T K A V R T L D E I R F T E V L A E L V A T H T D T I P I L A R G F L E C R
UniRef90_E9CED2         P A   I K S L A D E A R F V E L K E L L D S H N H V V V S L A S A A A E I S
UniRef90_Q4SMY8         P G A P D R D P Q P P Q R R           V P T M A Q G V I E Y R
UniRef90_W1QEG8               G R I E T L D E N D K F C D F L R K V L D D H L L V L P H L M M G A L E V S
UniRef90_F7VPX1         G D W P P D L H L Y N Q R F A Q T L H K I K R R H D S V V T T M A Q G I L E Y K
UniRef90_UPI0004407D1C  P    P I T S M A D N L K F C E L V R S L L D E H A A I I P S L A L G L S L S S
UniRef90_UPI0001D5660E  E N K S P E D P Q V L D N F L Q V L I K V X N R H N D V V P T M A Q G L I N Q H
UniRef90_C5MC72         P    K I H T I E D N N K F C E M M S S M L D D H I F N L S H L M M G A L E V A
UniRef90_U7PLK4         K    E I K T L D D N D V L C D V I G Q T L Q A H L P V I P K L A M G I L E C S
UniRef90_I1CM47         P    P I Q K E S D N M K F C E L L R D L L E D G Q L V L P R L A R G L S E S T
UniRef90_W2SAL7         Q V W P P E L A D Y N K K F S R C L E Q I K R R H D P V V T T V A Q G I N E Y K
UniRef90_G8YID9         P    P I T T L Q D N D K F C D V L S R L L D D H I F N L S H Q M M G A L E V S
UniRef90_D8PW65         P    P V R T L E E N A V F A R H L E E L V E R H A N D I P A M A K G F Q E S S
UniRef90_UPI000383B6DF  E N Q S P E D P Q V L D N F P Q V L I K V R N K H N D V A P T M A Q G V I E Y K
UniRef90_S2J2J7         G H C S P E I V E Y N N A F V K T I E Q V K R R H D P V V T T I A Q G I I E Y K
UniRef90_UPI0003EAB5AF  L D K S P E D Q S I L S N F T D A L V K I R N R H N E V V P T M A Q G I I E Y K
UniRef90_L8X0M5         P    E V K D L E D N D E F S R E L E S L V E M H A N D I P T I A K G F Q E C S
UniRef90_M2RIP7         P    P V R T L E D N A V F S T K L D S V V Q S H A H D I P T L A K G F Q E C A
UniRef90_UPI0004417011  P    D I R T L E D N V K Y T S V L Q D L V E R H A Q D I P L M A K S F Q E C V
UniRef90_S9X4M2         H E K S P E D Q K A L S D F V D T L I K V R N R H H N V V P T M A Q G I L E Y K
UniRef90_E1ZBW9           D P I S D M Q R N D F H F V K L L R R L V D E H S P M L D A L A Q G I R E V R
UniRef90_U1GH00         N N W P P E L T D Y N K R F A R T L E G I K R R H D S V V T T V A Q G I N E Y K
UniRef90_J4H3A0         P    P V K T L E D N K R F S A Q L E A L V R A H A D D V P T M A K G F Q E C S
UniRef90_S7QEK7         P A V T   S L E E N A Q F T S Q L E S F V Q S H A N D I P T L A K G F Q E C T
UniRef90_J3Q423         P    E I R C R L D N Q K W C Q F L E N L L N E H K V V I P K L A I G V A E S R
UniRef90_K5VW46         P    P V R S L V E N V R F T E G L A L V Q S H S N D I P V M A K G F Q E C S
UniRef90_A8PN19         E N A E P T D   D N I S S F N E K L E T V M M R H E N T I E E M A E G I V Q L R
UniRef90_G0SVG6         P    P I K S L E D N D R F C Q Y M Q G T L N K H R V V I P E L A I G V A E A
UniRef90_E9H8D3         P V   I R T P E D E A A Y S R L L R N L L D D H T H V V T Q L A A G F K E C R
UniRef90_A5E1I7         P Q   I N S I E D N E R F C Q T L S R L L D D H V F N L S H L M M G A L E V S
UniRef90_W7TC29         P    T P N T V A K E A D F A V L L K N I Y E R H A P V L L T M A R G A Y E L R
UniRef90_G4U344         P    P V V D A A S N I E F T R R L E N L V R S H A N D I P V L A R G F Q E C A
UniRef90_C4R4B6             S R I D N L E E N D K F C E F I K D T L D E H L T V L P H L M M G A L E N S
UniRef90_A0A024JB53     A E H T K N T P P E V Y R C L D E F A T C L N E H D A V V T T V A Q G I K D Y R
UniRef90_F4P6R3         P    E P K T D E D L N K L A T T L A E L T S E H K T V V P K L A N G F M E C G
UniRef90_R1FC28         K    K P V D A E G E A E F T E L L H N I Y Q R H A P T L V T M A R G V H E L R
UniRef90_H8WWH7         S L Y T P H T P E E N A E F T E T L S E F I D I H A D T L P S L S K G F G E V S
UniRef90_B8P4M5         P    P V Q T L E D N Q R L T A E L D G L V Q S H A N D I P T M A K G F Q E C A
UniRef90_K1X8M6         T D W P P E L Q D Y N K F S Q T L N T I K R R H D G V V T T V A Q G I L E Y K
UniRef90_H3AKR9         R P S I I T N R E V E A Q Y C K L L K Q L L D D H K D V V T L L A E G F R E S R
UniRef90_M7BEE1                         C F I D T L V M V R N R H D V V P V M A Q G V I E Y Q
UniRef90_J3PHH0         G D W P P E L Q L Y N Q R F A Q T L H K I K R R H D G V V T T M A Q G I L E Y K
UniRef90_F2TXM9         E H V T P S S P Q A G Y V F T D R V R S I L H R H S S T V L T F A M G F R N L K
UniRef90_M0VNX0         P E V R N R D D E   L A F T Q M I K M L R V L H R H A P V T P T L A R G L Q L K
UniRef90_A9UQV4         D A T P Q D A D A Y C Q G F T E L L E R T L L R H R A T V I T F A L G L R Q L H
UniRef90_L8G7C6         G D W P P E L F D Y N K R F A E T L N T I K R R H D G V V T T V A Q G I L E Y K
UniRef90_K3VH56         S D W P A D L H L Y N Q R F A Q T L H I K R R H D G V V T T M A Q G I L E Y K
UniRef90_K9HUZ2         A P V T S S S Q   N E E F V E K L A S I V E D H T D D I P T M A K G F Q E C S
UniRef90_W3WWY4         N D W P P E L D K A Y N Q K F S Q T L K T I K R R H D G V V T T V A Q G I L E Y K
UniRef90_M7WCR3         P    E V K T L A D N D R L C K V V A Q M V E E H R D N I P L L A K G F K E S R
UniRef90_C0S8E4         P Q   I K T L E D N D K Y C D I L R A T L K E H L T V I P N L A M G V L E C Q
UniRef90_M2Y3I9              R K I Q D L Q E N E F C K L L V D E S A N V V E L P H L H G L R L
UniRef90_F4P5Y5         A    P I T T I E Q N R E L C A I V Q S L L N A H L V A I P E L A L G I A Q S E
```

```
                    130            140            150           160
UniRef90_S3C043       E L M S A          R D L D L F A N T I L S A R I I S R R V I A E Q H L A L T E T
UniRef90_S7RWJ3       L S L S S P Y L P P D Q L D S F M R R M L V S R I I S R R V L A E H H I A L S E D
UniRef90_K5XXR7       P Y L A P D       E L D S F M R R M L T S R V S R R V I V E H H I A L T E M
UniRef90_UPI0004417DC9 P Y L       P P E Q L D S F M R R M L V R L S R R V I V E H H I A L S D T
UniRef90_E5SBS9       A T H G I D P V T Q N N I Q Y F L N R F Y L S R I I S V R I
UniRef90_E4WQJ0       A S V G N R S I D E E K M Q Y F L D R F Y M S R I I A I R V L I N Q H V G M F G D
UniRef90_G1TKK4       E S F R V D P V T G P H V Q V F V D R F [C] M R R I S I R M L L N Q H
UniRef90_T1EFD5       A Q Q Q V S S P V D A R I Q Y F L D T F F L S R I I A I R F L A G H H I S M L D P
UniRef90_D8TIN2       R D L Q V G V E S E S E I Q H F L D T F F L S R I I A I R F L A G H H I S M L D P
UniRef90_UPI000455ED67 L S L S S P H L S P E L L D S F M H R M L V S R I I S R R V L A E H H L A L S K A
UniRef90_F4NWT5       E H W K R T N S P P T A I Q Y F L D N F Y M S R I I G I R M L I G Q H T S M T K A
UniRef90_UPI00022350DD D T Y G D D P V S N Q N V Q Y F L D R F Y L S R I I S I R M L I N Q H T L I F D G
UniRef90_UPI0001CBB202 R H I K       D E Q L V R R F L D N T L T S R L A L R M L A E H H L A L
UniRef90_N4W0M0       G R M D P A D L D K F M N T V L R S R I I S R R V I A E Q H L A L T D T
UniRef90_S2IWB6       Q Y M N S       Q D M A R F L D D M I Q A R I G I R L I A E Q A I A L M Q Q
UniRef90_H6BSX6       R K Q Q R M Q   I D S S I Q S F L D R F Y M S R I I G I R M L I G Q H I A L T E Q
UniRef90_G7E3G3       S A K E T P A S Q L D A F M A K M L R S R I I S R R I L T Q Q H I A L S E Q
UniRef90_G4V9U6       S D G S W S E S Q E L Q L Q Y F L D R F Y V S R I I G I R T L N Q H F M L Y G P
UniRef90_R7YMI8       G L M E P       E D T D K F M T T L L R S R I I S R R V I A E Q H L A L T E T
UniRef90_M5G7C1       S L S S Q H L A P E L L D T V L R R M L V S R I I S R R V V A Q H H V A L S R S
UniRef90_F9FWM1       R R R Q R M Q I D S T   I Q S F L D R F Y M S R I I G I R M L I G Q H I A L T D Q
UniRef90_D5GER0       G Y       V T P E E A T K F L D H H L R A R I G T R L M A E Q H I G L H
UniRef90_D7FPX6       E S F G P D F Y D F E R T H T F L D G F Y M S R I I G I R I L I G H Y L A L Q E A
UniRef90_R8BW16       R K R Q R M Q I D N   N I Q S F L D R F Y M S R I I G I R M L I G Q H I A L T D Q
UniRef90_S0EBU9       R Y I S P       E E V T K F L D Q H L R A R I G T R L I A E Q H I A L H F S
UniRef90_I0Z077       M K P I V G P K       L Q M D N F L D S M L R S R I I S R R V M A E Q H I H L
UniRef90_D2W0E3       S K M K F D L A E F S E L H Q A L D A F Y I N R I G M R M L I G Q H L A L H E Q
UniRef90_UPI00042C63D0 K H I E       D E K L V R Y F L D K T L T S R I G I R M L A T H H L A L H E D
UniRef90_UPI0004560C10 R Y       M D A R Q I S S F L D G A I H S R V A I R M I A E Q H L A L S A T
UniRef90_F4RVP2       N H L       T S H Q I D T F M T R M L Q S R I I S R R V L A Q H H I A L T N Q
UniRef90_X8JHX6       R K S G G N Q G A D E E L H N W L D R F Y M S R V S M R F L I S Q H M A I S S
UniRef90_M5E6Y3       E Y       M D S E K V S N F L N A A L H S R I G V R I I A E Q H L A L T A T
UniRef90_E9DS73       G L       M D P Q E L D K F M N T I L R S R I I S R R V I A E Q H L S L T E T
UniRef90_A8J1W3       R E L E S T E A R E S E I Q H F L D T F F L S R I I A I R F L A G H H I S M F D P
UniRef90_A6R2Q7       R K R Q R M Q   I D S N I Q S F L D R F Y M S R I I G I R M L I G Q H V A L T D Q
UniRef90_UPI000359F61B K Y V S D E I L   I K S F L D R T L T S R L G I R M L S E H H L A L H D E
UniRef90_C4XVV9       S [C] I L N T L R Q E E L D M F M S S M L R S R I I S R R V I V E E H L S L T E
UniRef90_G7DZJ4       R Y M S       D V E I S Q F L D R A I R N R I S I R L I A E Q H L S L
UniRef90_A8PVB4       K Y       M D S V R I S K F L D A A L H S R I G I R I I A E Q H L A L S E A
UniRef90_H1W1L9       R Y I S P       Q E V T R F L D E H L R A R I G T R L V A E Q H I A L H Y S
UniRef90_E9CED2       K Y L       T Q S E L N E F L H K M L V T R I S R R A L A E H H I A L H N F
UniRef90_Q4SMY8       E K F G F D P F I S S N V Q Y F L D R F Y T N R I S F R M L I N Q H
UniRef90_W1QEG8       I L E K       M R Q E E L D D F M S S M L R S R I I S R R V I I E Q H T T L S E S
UniRef90_F7VPX1       R K R Q R M Q   I D H N I Q S F L D R F Y M S R I I G I R M L I G Q H I A L T D Q
UniRef90_UPI0004407D1C H H L       P P E Q L D A F I T R M L I S R I I S R R V L A E H H L A L T E D
UniRef90_UPI0001D5660E T L L
UniRef90_C5MC72       I S       N N L P E A E L N Q I I H K M L S S R I I S R R L I I E Q H L S I S Q S
UniRef90_U7PLK4       D L M P A R D L D K F M N T I L R A R I S R R V I A E Q H L A L T E T
UniRef90_I1CM47       A Y Y P P D Q N       D L D L F L N R M L R S R I I S R R V L A E Q H L A L T E A
UniRef90_W2SAL7       R K K Q R M Q   I D S S I Q S F L D R F Y M S R I I G I R M L I G Q H I A L T D Q
UniRef90_G8YID9       I L G S L       P Q E E L D Q F M S T M L R S R M S R R L I V Q E H L S L S E N
UniRef90_D8PW65       K Y M S P A Q M A E       F L D G A F R S R I I S V R L L A E Q H I S I S Q A
UniRef90_UPI000383B6DF E K F G F D P F I S S N T Q Y F L D Q F H T N H I S F H V L I N Q H T F P F G S
UniRef90_S2J2J7       D H L N S       P L I D T E V Q R F L D R F Y M S R I I G I R M L I G Q H V A L Y R G
UniRef90_UPI0003EAB5AF E T F G Q D P L T S Q N I Q Y F L D R F Y M S R I I S I R M L I N Q H T L I F D G
UniRef90_L8X0M5       K Y L N Q D R       I S S F L D L S I R G R I A V R L I A E Q H I A L S R A
UniRef90_M2RIP7       R Y       M T P E Q I S S F L D G A I H N R I A V R L I A E Q H I A L T R A
UniRef90_UPI0004417011 R Y M P S G       D I G V F L D G A I R N R I A V R L I A E Q H I A I S H A
UniRef90_S9X4M2       D A [C] T V D P V T N Q N L Q Y F L D R F Y M N R I S I R M L M N Q H I L I F S D
UniRef90_E1ZBW9       S K P I       L D G F L E N M L R S R I S R R V M A E Q H I N L T H Q
UniRef90_U1GH00       R K R Q R M Q   I D S S I Q S F L D R F Y M S R I I G I R M L I G Q H I A L T D Q
UniRef90_J4H3A0       R Y       M T P E Q I S I F L D E A I R T R I S V R L I A E Q H I A L S R A
UniRef90_S7QEK7       R Y M S P T Q       I S N F L D G A I R N R I A V R L I A E Q H I A I S R A
UniRef90_J3Q423       S H L       T N S Q I E Q F M T R M L Y S R I S R R V L A E H H I A L T R Q
UniRef90_K5VW46       R Y       M T P E Q I S S F L D S A I R N R L A V R L L A E Q H I A I S R D
UniRef90_A8PN19       Q K Y G I N I T S N N K I Q Y F L D R F Y F N T I S I R I L Q H Q H L I I F G T
UniRef90_G0SVG6       S T Q Q L P P A A L D R I M L R M L R S R I I S R R V I T E Q H I A L T Q Q
UniRef90_E9H8D3       K H I Q       N E D L V R Q F [C] D R T L T S R L G I R L L V T H H L S L R E E
UniRef90_A5E1I7       I A E S L P Q E Q L D A F M S S M L R S R I I S R R V I A E E H L S L S E N
UniRef90_W7TC29       Q K Y G S S E F Y D L E V H N F L D A F Y L S R I G I R M L I G Q Y L E L R E P
UniRef90_G4U344       K Y M R P E V       I S S F L D G A I R S R I A I R F I A E Q H I A L T R A
UniRef90_C4R4B6       I L N S L P Q K E L D E F M S S M L R S R V S R R V I L E E H I S L T T R
UniRef90_A0A024JB53   T S G K T K Q L P M R D I Q A F L D R F F M S R I I G I R V L V G Q Q L A L M K G
UniRef90_F4P6R3       K Y M E K D R A       R E F L D G M I H S R I G T R V I A E H Y L A L
UniRef90_R1FC28       Q K L R A E R G E K Y D I H G F L D S F Y M S R I I G I R I L I G Q Y L E L H H E
UniRef90_H8WWH7       N L L S M K Q       I T Q F L D R H L R E R I S M R L I A H Q H I E L S R S
UniRef90_B8P4M5       R Y L       T P E Q I S T F L D E A I R N R I A V R L I A E Q H I A I S R A
UniRef90_K1X8M6       R K R Q R M Q I D N   N I Q S F L D R F Y M S R I I G I R M L I G Q H I A L T D Q
UniRef90_H3AKR9       K H I       L D E S V L R L F L D K T L T S R I G I R M L A T H H L A L H D D
UniRef90_M7BEE1       D A F R V D P V T N Q N I Q Y F L D R F Y M N R I S I R M L I N Q H N A F E T
UniRef90_J3PHH0       R Q R Q R M Q I D N   N I Q S F L D R F Y M S R I I G I R M L I G Q H I A L T D Q
UniRef90_F2TXM9       K Q R K L R N [C] E H Y V T S Y L D R F L M S R I G I R F L F N Q H M T L V E P
UniRef90_M0VNX0       N E Q R K L P P G F D E I H E F L D G M I R S R I G I R M L I G
UniRef90_A9UQV4       N K G L L V G R E E Y I T E Y L N R F L M A R I G I R F V F N Q H L A L F S H
UniRef90_L8G7C6       R K R Q R M Q   I D H N I Q A F L D R F Y M S R I I G I R M L I G Q H I A L T D Q
UniRef90_K3VH56       R R R Q R M Q I D S T   I Q S F L D R F Y M S R I I G I R M L I G Q H I A L T D Q
UniRef90_K9HUZ2       R Y M S P T Q       I S N F L D G A I H N R I A V R L I A E Q H I T L S K A
UniRef90_W3WWY4       R K R Q R M Q   I D H N I Q A F L D R F Y M S R I I G I R M L I G Q H I A L T D Q
UniRef90_M7WCR3       K Y L       P D A T I T D F L D R A I R N R I S L R L I A E Q H L S L S A A
UniRef90_C0S8E4       D L V K P E E I D R F M N T L L R A R I S R R V I A E Q H L A L T D T
UniRef90_M2Y3I9       A L L R A S Q R E H L D L D S F V D Q M L I S R I I G I R M L H V M L H E S
UniRef90_F4P5Y5       Q H       M T T Q A A D K F I N E T L R S R I G R R V L A E Q H I A L S Q
```

```
UniRef90_S3C043          Y N S
UniRef90_S7RWJ3          S R S G D
UniRef90_K5XXR7          F R
UniRef90_UPI0004417DC9   Y A
UniRef90_E5SBS9
UniRef90_E4WQJ0          S
UniRef90_G1TKK4
UniRef90_T1EFD5
UniRef90_D8TIN2          P R P D H
UniRef90_UPI000455ED67
UniRef90_F4NWT5
UniRef90_UPI00022350DD   S T N P
UniRef90_UPI0001CBB202
UniRef90_N4W0M0          Y H S P
UniRef90_S2IWB6
UniRef90_H6BSX6          S
UniRef90_G7E3G3          Y A S G S
UniRef90_G4V9U6
UniRef90_R7YMI8          Y H S P
UniRef90_M5G7C1          L A Q P
UniRef90_F9FWM1          S H
UniRef90_D5GER0
UniRef90_D7FPX6
UniRef90_R8BW16          S H
UniRef90_S0EBU9          S Q P H
UniRef90_I0Z077
UniRef90_D2W0E3
UniRef90_UPI00042C63D0   K P D
UniRef90_UPI0004560C10   S Q
UniRef90_F4RVP2          F
UniRef90_X8JHX6
UniRef90_M5E6Y3          A K S
UniRef90_E9DS73          F N S P
UniRef90_A8J1W3          P R P E H
UniRef90_A6R2Q7          T H V H H
UniRef90_UPI000359F61B   K P N H
UniRef90_C4XVV9
UniRef90_G7DZJ4
UniRef90_A8PVB4          A R
UniRef90_H1W1L9          S Q P H
UniRef90_E9CED2          F R N K H
UniRef90_Q4SMY8
UniRef90_W1QEG8          F Q N Q D
UniRef90_F7VPX1          N H
UniRef90_UPI0004407D1C   F
UniRef90_UPI0001D5660E
UniRef90_C5MC72          Y N
UniRef90_U7PLK4          F N
UniRef90_I1CM47
UniRef90_W2SAL7          A N H R H
UniRef90_G8YID9          Y K
UniRef90_D8PW65          L D D P S
UniRef90_UPI000383B6DF   D T N P
UniRef90_S2J2J7          P S R K D
UniRef90_UPI0003EAB5AF   T T N P
UniRef90_L8X0M5
UniRef90_M2RIP7
UniRef90_UPI0004417011   L Q
UniRef90_S9X4M2          L Q T G N
UniRef90_E1ZBW9          R P
UniRef90_U1GH00          T G A R H
UniRef90_J4H3A0          L E E N D
UniRef90_S7QEK7
UniRef90_J3Q423          F Q
UniRef90_K5VW46          L Q Q P
UniRef90_A8PN19          L L P
UniRef90_G0SVG6          F R
UniRef90_E9H8D3          K P
UniRef90_A5E1I7          Y R
UniRef90_W7TC29          P K
UniRef90_G4U344
UniRef90_C4R4B6          F Q
UniRef90_A0A024JB53      N H S E D
UniRef90_F4P6R3
UniRef90_R1FC28          T Q P E G
UniRef90_H8WWH7
UniRef90_B8P4M5          L E E G G
UniRef90_K1X8M6          S H N R D
UniRef90_H3AKR9
UniRef90_M7BEE1          S R
UniRef90_J3PHH0          S H
UniRef90_F2TXM9
UniRef90_M0VNX0
UniRef90_A9UQV4          R H Q P
UniRef90_L8G7C6          N H N K D
UniRef90_K3VH56          S H
UniRef90_K9HUZ2          L S N
UniRef90_W3WWY4          S H
UniRef90_M7WCR3          S L P
UniRef90_C0S8E4          F N A P
UniRef90_M2Y3I9          R P
UniRef90_F4P5Y5
```

```
                              1         10        20        30        40
UniRef90_Q6BXJ3          R L I Y H Y A Q I P L T T I S L D G L C E Q S K D L S S S A R D T V E S L L
UniRef90_I8TUQ2        L M E T I R H Y A S F P A T G V S L R Q M V Q F G D R P S T A S Q F L S E E L P
UniRef90_F8NNC8                                              R L L K S A N Y V R T E L P
UniRef90_J7S8H4          L I E N Y A R R T P N P V S L T Q L A Q Y Y D D S S T S G K F V K E E L A
UniRef90_M1VYF7        L M D T I R H Y A N F P A T G V S L R Q M V Q F G D K P S T A S Q F L A E E L P
UniRef90_F0YQR7                      T G V S L R G L V D A G Q N L L T I A S F L H H E L P
UniRef90_D3PH40            E I D K A A S E P S I R L T P T T I M Y A G N H I L R S A Q Y L Q K E L P
UniRef90_G3AJ43          R P I V Q Y S Q K P L P K F S L K Q L Y R Q S E K L L K N A Y D T V E H L L
UniRef90_UPI000455F671 L A Q L L A H H A S H L P L P L T L T N L V A F G Q P L L K S V T Y V L S E I P
UniRef90_D5G730        L M D T I T H Y S Q F P A T G V S L R Q M V Q F G R N P S K A S Q F L F R K L P
UniRef90_K0KNE9            L M N W A Q R T P H P V T L R Q L A A F G K A L N S S A N F V R L E L P
UniRef90_L1JQ95          E I L F F S L R H A A T V T L K E M H Q F G R A L L L A A Q F L H E E L P
UniRef90_G0WG24          L I K D Y L Q K S P H A V S L T Q L A Q Y Y D D S T T S G R F V K E E L A
UniRef90_A0A059LS92       I E E Y A G Q P L E R L T L R K L M Q F G R R I V A S A N F V Q E E L P
UniRef90_N1JH65        L M E T I K H Y S S F P A T G V S L R Q M V Q F G E R P S T A S Q F L S E E L P
UniRef90_Q6CUD8          L V K K Y L Q K K P H P M S L K Q L A Q Y Y D D S S S S G K F V K E E L C
UniRef90_G8JR19          L I E K Y L Q R K P H A V S L K Q L A Q Y K Q K V I N S G Q F A K D E L V
UniRef90_A0A024JEL6     R L I S E Y A A K P Q E P I N L E N L L K F G D V L L K N A G S V L K A I A
UniRef90_G6D074
UniRef90_R1EXG7           I R H Y A G F P A T G V S L R Q M V Q F G E R P S T A S Q F L S E E L P
UniRef90_E3KAA6                Q S L K K V S L D R L M R F G T P P L S S A E L T R Q E L I
UniRef90_R0KPS6        L M E T I K H Y S K F P A T G V S L R Q M V Q F G E K P S T A S Q F L S E E L P
UniRef90_C4Y831         R L I Y H Y S R Q P L A K F S M S G L Y E Q S R K L L Q V A R D S V E S L L
UniRef90_S3CQ88        L M D T I K H Y S F P A T G V S L R Q M V Q F G E R P S T A S Q F L S E E L A
UniRef90_E4WTH8           D I H N A A K K D S V R L K A A A L L F T G R I P S R S A Q Y L Q S E L P
UniRef90_L1K0L0                            K S K R T L L L A A Q F L H E E L P
UniRef90_M2RL84              D F L R K N S H R V S L G Q L L Q I G A S         H Q V V P P
UniRef90_M2LMB8        L M D T I K H Y S S F P A T G V S L R Q M V Q F G Q S V S T A S Q F L S E E L P
UniRef90_L1JNM9          L L W A L S E Q N A T P V A L S D L Y R I G R T R I K F G Q F L H R E L A
UniRef90_UPI0003991E72
UniRef90_J4G631                                     D R L I R S A N Y V R T E L P
UniRef90_C5E2P8            K H Y L T K K P H P V S L M Q L A Q Y K Q K I V N S G N F V K Q E L V
UniRef90_G3BFW2         R L I F H Y A Q R P L S K F S I Q G L I E Q S E S L L Q N A Q N T V E Y L L
UniRef90_D8M4J4         K E I K R F Q R L D Q Y A I T L D H L E E F G R K F L L S A Q F C F R E L P
UniRef90_U5H4N7          L L A H Y S Q I P T R T V K L S D L T Q Y G T P P L S S G E R T R K Q L L
UniRef90_K3X8C8       M D E I K E L A Q N Q P T P L S L R Q M K T Y A A A R L V S A S F L H K E L Q
UniRef90_R7QR55          L E R F A R K P I S R K T L N A L A F P K N S L F A S A N Y V K N E L P
UniRef90_B8CDF6                                    L L Q V A S F L R R E L P
UniRef90_V2XW89                   M N L S D L L A F G R P V L A S V S Y A L A E I P
UniRef90_W7TRD2        L M L R V E E L A R Q R T T P L S L L D L Y R F G N H P L R N A Q F L H F E L P
UniRef90_H2ANF4          L L D D Y L K R S P H P V S L M Q L A Q Y Y D D S K K S G Q F V K E E L I
UniRef90_T2MJL2          F V D R E A A K P L H K L T P T Q I M F H G K H L V K S A H Y L Q Q E L P
UniRef90_S7ZDA1           I R H Y A S F P A T G V S L R Q M V Q F G D R P S T A S Q F L S E E L P
UniRef90_UPI00042C069A
UniRef90_G8ZXW0          L I Q D Y L R K R P H P M S L T Q L A Q Y K Q K I I T S G K F V K E E L S
UniRef90_A7TR43          L L D D Y L Q K S P H P M S L M Q L A Q Y Y D D S T K S G R F V K E E L S
UniRef90_E2LDY9          K I N H F A S F Q Q S S V S L R H L L L F G Q S P N K A S Q F L A E E L P
UniRef90_L1IIA2           I Q K Y A E L P I H R L T I H E L M S S G H K V N N E A Q H V Q R E L C
UniRef90_E3S5Z2
UniRef90_A3GH34         R P I Y Y Y A E K Q L P K F S I E R L Y D Q S R K L L Q N A I E T V E Y L L
UniRef90_G2WUK2                                     N S A W R A V S V L L
UniRef90_M0TPE3        L A E E V R R W G A M K R N G V S L R Y M M E F G A R P L L S A Q F L H K E L S
UniRef90_M0TPE3        L A E E V R R W G A M K R N G V S L R Y M M E F G A R P L L S A Q F L H K E L S
UniRef90_Q6FU21          L I N D Y L K K N P T P V S L T Q L A Q Y K Q K V I S S A K F V K E E I S
UniRef90_B7G0X2                                       A G F L R R E L P
UniRef90_F7EDQ5             R L T P T T M L Y S G R S Q D G S H I L K S A R Y L Y K E L P
UniRef90_D2W1X1          V Y N Y S K M T P A S L S V S T L V E F V E S L V L S S G W L I E E L R
UniRef90_G2Y3R2
UniRef90_T1FVF4          D I D S A A E K P Q K P I S L F K L L K N K D H L I K N A R F L Q Q E L P
UniRef90_W2SNI0       V A K K L E H Y S Q F Q P S S L T I Q Q Y L D F G R T A A T S Y T F L K N E L M
UniRef90_V2XTF5          K I N H F A S F Q Q S S V S L R H L L L F G Q N P S K A S Q F L A E E L P
UniRef90_W0VY92          L I Q D Y A N K P I P P I T Y D Y L T Q Y K P P L R N N E E Y L L N L L L
UniRef90_A0A044UWT9      E R L K Y Y E R F R P Q P I S L Q M Y L T F G R T V E L S F K F L Q K E L L
UniRef90_UPI0004407557 V A A L L A N S L A Q S P R P L T L S K L L S Y G R P L L A S A S Y V Q S E I P
UniRef90_U5GY65          K T I E K F A A Q R S T P I S L K H L I N F G K H L L K S G N F L R T E L P
UniRef90_N1QL16
UniRef90_Q6C5A5           I A R L A A L P Q K T I T L D E L V K F P R D L E T N A Q D T L E Q I K
UniRef90_I2H5Y3          L V K E Y L T K D P H P V S L N Q L S Q Y K Q K I I S S G V F V K E E L S
UniRef90_V5FC97        L M D T I R H Y A S F P A T G V S L R Q M V Q F G D R P S T A S Q F L L N E M P
UniRef90_G4ZD84       M D Q V R E I A D M E P T P L S L Q Q M A D G G A K L R V S A K F L H K E L Q
UniRef90_F4R5Y3       L K D K I T H F A S F P Q T G V S L R Q M V M F G Q N P L R A S E F I H E E L P
UniRef90_C5M4L3            I I H Y S S K K L P Q F S I Q E L Y S Q S T K L L Q N A R E T I E H L L
UniRef90_A5D9U7          R L V H H Y S E K Q L P Q F S L R R L Y D Q S T K L L Q N A R D T I E W L I
UniRef90_UPI00044495A9 L A S L L A I Y A Q Q P P R P L T L G T L L S L G D P L L K S A S Y A Q S E I P
UniRef90_X6P7K8           I R S Y A E N K V I Q L T L R E I V E F S T P G R D F A A F I K R E L P
UniRef90_A0A024S558    L M D T I R H Y A K F P A T G V S L R Q M V Q F G D K P S T A S Q F L A E E L P
UniRef90_A0A024S558    L M D T I R H Y A K F P A T G V S L R Q M V Q F G D K P S T A S Q F L A E E L P
UniRef90_L1K237          M W E Y A K K E F K L N L S E L L K F G R T L L M S A V F L Q K E L P
UniRef90_W4GEM9          E D I A A M A K V S P T P L T L Q Q M K T F A T N R L K A S A F L H N E L Q
UniRef90_D8LK85          E L L A T L S V Q E A T P L S L R D I H A F C Q S S S R Q A Q F L H R E V P
UniRef90_M7SC94        L M D T I G H Y A N F P A T G V S L R Q M V Q F G E R P S R A S Q F L L N E M P
UniRef90_E3L4C7        L K D K I S H F A S F P Q T G V S L R Q M V M F G Q N P S R A S E F L H E E L P
UniRef90_B4DLP2        A P K Y I E H F S K F S P S P L S M K Q F L D F C E K T S F T F L R Q E L P
UniRef90_Q6FLT2          L I Q E Y A S K P I P P L T Y D Y L T H Y K P P L S A N E E Y M L N L L L
UniRef90_G4ZD85       M D Q V R E I A A T E P R P L S L R Q M R T F A K V R L M S A Q F L H Q E L Q
UniRef90_A8PSE3          M I N E W A N H P A H R T T L Q Q L I M F G R S A R Q S A D Y L R R E L T
UniRef90_T0QFM6          E I V A L A Q V S P T P L Q Q M K T F A T N R L R A A K F V H K E L Q
UniRef90_W2NDF6        M D E V R E I A H N D P T P M S L Q Q M R T F G S T K L R A A K F V H K E L Q
UniRef90_W9W6B6
UniRef90_D8LL33           K A I Q D L A R E E V T C M S L K Q L Y V N G K N P L A N A Q F L H R E L P
UniRef90_U7PL24        L M D T I K H Y A N F P A T G V S L R Q M V Q F G E K P S R A S Q F L A E E L P
UniRef90_U7PL24        L M D T I K H Y A N F P A T G V S L R Q M V Q F G E K P S R A S Q F L A E E L P
```

```
                              50            60            70          80
UniRef90_Q6BXJ3      T Y N A R R I R E F R N L P Y L V V L N P S I S E S Y S I Y L E T M H S L I T A
UniRef90_I8TUQ2      I R Y A Q S F E E I I T L P R P T L T N P S I K E G Q A A A R R Y F V P S D D Q
UniRef90_F8NNC8      V R I A H R I R D L Q A L P Y V V V T Q E G V A A K V Y E L Y W S A F E K F R R Y
UniRef90_J7S8H4      I R M A K K L R L L Q N L P F N V V N N F H F V Q V Y E S Y Y D I F E R F R R F
UniRef90_M1VYF7      I R Y A Q S F E E I T Q L P R P D L S N P S I G K P K T L A R R Y F A T V D D T
UniRef90_F0YQR7      I R L A R R V V E L D G L P   G L H G M A S V R R R V R E W Y A T S A A E I   L
UniRef90_D3PH40      V R L A H I I S G M R N L P F I V G C N P I I L S I H E Q Y I H S F Q I L T D F
UniRef90_G3AJ43      I Y N A R R I K E F R K L P Y L V L N P S I S E S Y D T Y L H T M S S L L R A
UniRef90_UPI000455F671 R R L A T R V R N L E A L P F I V G T N P Y V A K T L A A Y R E S F Q L I A T H
UniRef90_D5G730      I G I C S H L R D I E R S P P W L I A T N T T G S V R K A Q R R Y Y A T V D D G
UniRef90_K0KNE9      I R I A L I L R D L Q D L P F N V V N N F H L A K V Y E S Y Y D I F D R F R K I
UniRef90_L1JQ95      I R L A R R V R E L K K L P F G L G E T A A M T Q V R K L Y E K S F F Q I R R T
UniRef90_G0WG24      I R M A H K I H K L Q K L P F N V V N N F H L A Q V Y E S Y Y N I F E R F R K Y
UniRef90_A0A059LS92  K R L A R R L L D L Q L L P H L V V S N P H I S V V Y D A Y Y S A L C E L R R A
UniRef90_N1JH65      I R Y A Q S F E Q I T T L P K P H I S M Q L V A G V R S S Y R R Y F A V V E D S
UniRef90_Q6CUD8      V R I A H K L D L L Q N L P F D V V N N F H F N Q V Y E S Y Y N I F E R F R K F
UniRef90_G8JR19      V R M A H K L K Q L Q D L P F D V V N N F H F V Q V Y E S Y Y N I F E R F R K F
UniRef90_A0A024JEL6  I R L A H R L E T L R N L P Y L I V L N P N I S Q I Y T I Y Y N S F T I I S Q
UniRef90_G6D074          M K E I A L L P E N L L R M P S V G L V N Q W Y E R S F E E I I E F
UniRef90_R1EXG7      I R Y A Q S F E E L V T L P R P K L T T Q N P S I T K G Q Y R R Y V A A D D G
UniRef90_E3KAA6      Q R I Q R R V N A H L S L P Y L P A S N P H I K Q V M S I Y R R S F E E I N S L
UniRef90_R0KPS6      I R Y A Q S F E E L V E L P R P T L S N P S I R E V K G A S R R Y Y A A A D D G
UniRef90_C4Y831      A Y N A R R I R Q F R N L P Y L V M L N P S V S E V Y N M Y L Q S M S I L L N A
UniRef90_S3CQ88      H R Y A Q S F E E I T Q L P R P N L S N P S V R K G Q G Q A A R R Y F A T V E D S
UniRef90_E4WTH8      V R L A H R I K G F R S L P F I V V T N P H I L K V M E Q Y I R S F K V I S S F
UniRef90_L1K0L0      V R L A R R A R E L K R L P F G L G E M V S I K G V R K L Y E R S F F R L R R F
UniRef90_M2RL84          L A H R L R D I Q T L P Y V V V A N P H L A H V Y E S Y L R A F E R F R R I
UniRef90_M2LMB8      I R Y A Q S F E E I T T L P R L L S E T T H N P S V K G N V R R Y Y S A A D D N
UniRef90_L1JNM9      I R L A Q R A V E L S R L P H G L S N K P S V K N V S G W Y A E A S C A I   A
UniRef90_UPI0003991E72                                                    Y V Q S L L D I M E F
UniRef90_J4G631      V R I A H R L R D M Q A L P Y V V V N Q E G V A A V Y E A Y W A A F D K F R R Y
UniRef90_C5E2P8      T R I A H K I H M L Q M L P F D V V N N F H F C Q V Y E S Y Y N I F E R F R R Y
UniRef90_G3BFW2      A Y N A R R I R E F R R L P Y L V V L N P S V A E S Y N G Y L N T M S S L I T A
UniRef90_D8M4J4      I R L A Y R I F D L E N M P Y G M S E V N T T K T I R D W Y L Y S F I D M L D F
UniRef90_U5H4N7      A G L A R R V T Q H L S L P F L P A T N P S L Q S I H K L Y S S A F F D L V A V
UniRef90_K3X8C8      I R F A R A I V E L S D L P I G L N E T A S V K K A I D V Y S N E L K L L K S M
UniRef90_R7QR55      T R L S H R I V D M K E L P Y F V L T A P S I H H V Y Q I Y I D A F S S C S Q F
UniRef90_B8CDF6      I R L A H R I Q D L S R V P L   L Q D M K S V Q Q V K E L Y T T S F L E I M S V
UniRef90_V2XW89      R R L A T R V R S L E A L P F I V G T N P Y I A N T L A A D K D S F L W L A T Y
UniRef90_W7TRD2      R R I A Q R V I D R L P P G L A E K R G I Q N V M G W V A G Y V E E L Q A F
UniRef90_H2ANF4      V R I A S K I Y Q L Q C L P F S V V N N F H F V Q V Y E S Y Y N I F E R F R K F
UniRef90_T2MJL2      R R I A R H I K D F Q S L P Y V V L I N P I M Q E V Y E L Y L R A F R K L V
UniRef90_S7ZDA1      D G Y A Q S F E E I I T L P R P S L T N P S I R E G Q A T G R R Y F F P A D G N
UniRef90_UPI00042C069A                                                  Y I Q S L M D L V E F
UniRef90_G8ZXW0      I R M A H K L N S L Q Q L P F H V V N N F H F V Q V Y E S Y Y N I F E R F R K Y
UniRef90_A7TR43      I R I A H Q I N K L Q Q L P F S V V N N F H F V Q V Y E S Y Y N I F E R F R K Y
UniRef90_E2LDY9      I R L A H L I K E L N D L P Y D L N R M P S I V T V M D S Y A E S F E E L V N F
UniRef90_L1IIA2      I R L A R R L L D I Q T L P Y I V V E N P H I Q S V H A I Y H R A F A K L V D F
UniRef90_E3S5Z2          A H L R D I Q T L P Y V V V A N P H L A H V Y E S Y L R A F E R F R R V
UniRef90_A3GH34      A Y N A R R L K Q F R N L P Y L V V L N P S I S E S Y N T Y L Q T M S S L L T A
UniRef90_G2WUK2      D D I A H R I R D M Q Q L P Y G V V T N P H I S D V Y Q L Y H N A F D T F R K V
UniRef90_M0TPE3      A R I A R R A I E L E S L P L G L S G K P A V L K V L I I H L D G F V D L D P C
UniRef90_M0TPE3      A R I A R R A I E L E S L P L G L S G K P A V L K V L I I H L D G F V D L D P C
UniRef90_Q6FU21      I R M A H K I H S L Q L L P F N V I N N F H F V Q V Y E S Y Y N I F E R F R K F
UniRef90_B7G0X2      I R L A H R I R D L E G I P L   L K D M A S I Q L V R D L Y V K S F L E L L S F
UniRef90_F7EDQ5      V R I S H R I K G F R S L P F I I G C N P T I L H V H E L Y I R A F Q K L S E F
UniRef90_D2W1X1      I R L A Q Q V Q L L D E M P H G L N L M P S I R V R D W Y L T S F K Q L Y Q I
UniRef90_G2Y3R2          M Q T L P Y V V V T N P H M S Q V Y E L Y Y K A F E S L R R
UniRef90_T1FVF4      I R V A K R V V A F H M L P F L V A S N P S L L R C Q E L Y T S S F Q L L K S C
UniRef90_W2SNI0      V R L A N I M Q E F S L L P P K L L Q M P S S K M V S N W Y C E S F E D L L K Y
UniRef90_V2XTF5      I R L A H R I K E L N H L P Y D L N K M P S I V M V M D S Y A Q S F E E L V N F
UniRef90_W0VY92      C Y T C R Q L Q A I Q N L P Y I V V I N P N I E L T N S L Y L S T L E T L L S I
UniRef90_A0A044UWT9  V R L A N I T K E I D S L L Q H L P E L P S T V E I H R L Y C Q S F E E L L P F
UniRef90_UPI0004407557 R R L A R R I R A L E G L P F I V G T N P Y V A R T L E N H R R S F E W L A T Y
UniRef90_U5GY65      T R L S H R L R D L Q E L P Y V V A S N P R I E H V Y Q L Y L E A F E A L R R F
UniRef90_N1QL16          M Q T L P Y S A V R N P H I S H V Y E L Y Y D A F E K F R K V
UniRef90_Q6C5A5      I G L A H R L N A L R N L Q Y L V V L N P H I A Q I Y Q L Y C S F L I I S S F
UniRef90_I2H5Y3      I R L A H Q L N M L Q Q L P Y N V V N N F H F N Q V Y E S Y Y N M F E R I R R M
UniRef90_V5FC97      S I Y A Q S F E E I I N L Q R P S L T N P S I K E G Q T A S R R Y F V P S D D R
UniRef90_G4ZD84      S R F A R A I V E L S E L P L G L S D T T S I R D A I D V Y R R E L N W I N T
UniRef90_F4R5Y3      I R Y A Q S F E E L V E F P R P L H M Q K P L L Q T T G R Q R R Y Y V D L G T I
UniRef90_C5M4L3      I Y N S R R L K E F R K L P Y L V V L N P S I S E S Y N I Y L Q T M S S L L I A
UniRef90_A5D9U7      I Y N A R R L S D F R R L P Y L V I L N P S I S E C Y S S Y L H T M S S L I T A
UniRef90_UPI00044495A9 R R L A T R I R S L E G L P F L V G T N P Y V A R I M E G F R K S F E G V A R F
UniRef90_X6P7K8      I R I S H R I V E L E S L P Y N L S D M P S T L K L R N M Y Q L G F H L I R S L
UniRef90_A0A024S558  I R L A H R V E E L E T L P D G L N E M P S V K K V K D W Y A Q S F E E I T Q L
UniRef90_A0A024S558  I R L A H R V E E L E T L P D G L N E M P S V K K V K D W Y A Q S F E E I T Q L
UniRef90_L1K237      I R L G K R I Q E L Q S L P V P M Y S T K A V T E L A M L Y E E S F F R I L N H
UniRef90_W4GEM9      I R F A R A V V E L S E L P L G L N E T P P V K M A I A N Y T T F L H D V A A M
UniRef90_D8LK85      I R F A K R A L E L R H L P Y G L S H T A P V L E A A E W Y A R I M R E L V E C
UniRef90_M7SC94      S V Y A Q S F E E I T N L P R P H L D N P S I K S G Q L A S R R Y Y A L V D D S
UniRef90_E3L4C7      I R Y A Q S F E E I V N F P R P E L P P E I I A H F L G L S Q R Y Y V D L G D V
UniRef90_B4DLP2      V R L A N I M K E I N L P D R V L S T P S I V Q S V Y S L Y L S D I M E F
UniRef90_Q6FLT2      S Y T C R R L N A I Q K L P Y V A A V N P S I E K S Y S L Y L K T L E S L L S I
UniRef90_G4ZD85      S R F A R A I M E L S D L P L G L S N T A A V Q Q A I G V Y R Q E L H W I N T
UniRef90_A8PSE3      I R I A H R L R D M Q T I P F V A M S N E Q L D S I Y Q F Y W R T F E T L R R M
UniRef90_T0QFM6      I R F A R A I V E L S D L P I G L N E T K A V Q M A I R N Y T D H L E S V R A M
UniRef90_W2NDF6      S R Y A R A I M E L S D L P M G L S E T T S V R H A I N F Y R Y E L Q S I N R M
UniRef90_W9W6B6          M Q R L P Y V V V T N P H L S L V Y E L Y Y K S F E S F R R V
UniRef90_D8LL33      V R L S Q R A V E L M N L P H G L S D V P G V Q Q V Y N C Y A R Y A W E L F C A
UniRef90_U7PL24      I R L A H R V Q E L E N L P D G L S D M P S V R K V Q D W Y A Q S F E E I T T
UniRef90_U7PL24      I R L A H R V Q E L E N L P D G L S D M P S V R K V Q D W Y A Q S F E E I T T
```

```
                                          90            100           110           120
UniRef90_Q6BXJ3          S L N L P T T L E E N E K F C D V L S V F I D A H A D T L P S I S K G F D E V S
UniRef90_I8TUQ2          G N W P P E L N D Y N E R F A K T L Q H I K R R H D S V V T T V A Q G I L E W K
UniRef90_F8NNC8          P     P I N N M A D N Q S F C Q F L G N I L G E H A T V I P S           L S L G
UniRef90_J7S8H4          P       T I R T L E D N M R F A E F T K D I L Q D F N S N L P H L V M G A L E C
UniRef90_M1VYF7          A D W P A E L Q L Y N Q R F A E T L H T I K R R H D G V V T T M A Q G I L E Y K
UniRef90_F0YQR7          A A D R P T D G A S E R A F A Q L L E T I Y E R H A G V L Y T M A Q G A F E L R
UniRef90_D3PH40          P       T I K T V E D E E Q Y S Q L L R G L L D E H K T V I S Q L A K G F K E C S
UniRef90_G3AJ43          S L Y P P H T L K E N E E F A E V L T E F I D V H A D T L P S L S K G F S E V S
UniRef90_UPI000455F671   P     P V S S L E E N A V F T T Q L E Q L V E T H R N D I P T M A K G F Q E C S
UniRef90_D5G730          V R W P P E I V D Y N K R F T K I L Q N I K R H D P V V T T M A M G I N E Y K
UniRef90_K0KNE9          P Q     I K T I Q D N N E F C K T L E N V L T D N L L N L P N L M G A L E C R
UniRef90_L1JQ95          P       T P K T L E I E E N F T Q V L D R M M S E H N N V Q A T V A R G L Q E L S
UniRef90_G0WG24          P       R I K T I D D N Y K F C E F I K R I L Q D F N S N L P H L V M G A L E C N
UniRef90_A0A059LS92      P       R V S N L Q D N A A F C A L L K R L V D E H T P M L D C L A T G L R E V R
UniRef90_N1JH65          N G W P P E L H D Y N Q R F G N T L N S I K R R H D S V V T T V A Q G I L E Y K
UniRef90_Q6CUD8          P       E I K D E K D N L K F C Q F L H A I L S D F N S N L P H L I M G A L E C R
UniRef90_G8JR19          P A     I R T L E D N R R F A E F L C M I L S D F N S N L P H L I M G A L E C R
UniRef90_A0A024JEL6        T A P P T T R E E N D K I V E I L K R L V H T H S D T I P V L A R G F H E A A
UniRef90_G6D074          E K K E P E     P P V L S E F C E R L V L I R N R H S D V V Q T M A Q G V L E L K
UniRef90_R1EXG7          Q E W P P E L N Q Y N I K F A Q A L E R I K R R H D S V V T T V A Q G I L E W K
UniRef90_E3KAA6          P       P I R T V E D N A A L L Q A L V T M V D D A T D V I G M F A T G F K E S K
UniRef90_R0KPS6          L D W P P E L G A Y N R K F A D T L E K I K R R H D S V V T T V A Q G I L E W K
UniRef90_C4Y831          S L N P P T T A S E N D R F H E V L A R F I D I H A D T L P I L S K G F G E V L
UniRef90_S3CQ88          K D W P P E L H D Y N T R F A N T L N H I K R R H D S V V T T V A Q G I L E Y K
UniRef90_E4WTH8          N D G R M K K Q D Q V E D F T H L L E I L L D D H S V I D D L T Q G F S S C H
UniRef90_L1K0L0          P       K P S T T E L E E R F T E M L D D I K T E H N S V Q A N I A R G L Q D W S
UniRef90_M2RL84          P       E I R S L Q D N D K Y C K V L E E T L T E H A T V I P R L A T G V L E V R
UniRef90_M2LMB8          G E W P P E L S D F N T R F A K L L E K I K R R H D P V V T T I A Q G I L E Y K
UniRef90_L1JNM9          A S K R P V D D A S E D E F T K L L K R I L R D H T A V V R G L A L G C I E L K
UniRef90_UPI0003991E72   L D R D P E D Q A A L G Q F T A A L V T I R N R H N D V V P T M A Q G V L E Y K
UniRef90_J4G631          P       P I S T L E E N D A F C G F V R S L L D E H K A V I P N L S L G L S L S S
UniRef90_C5E2P8          P A     I K T L E D N K E F A E F L H T L S D F N S N L P H L I M G A L E C R
UniRef90_G3BFW2          S L Y P P A T L E E N H A F A E V L D E F I N I H S D T L P S L S R G F N E V L
UniRef90_D8M4J4          G R P K T Y K E A V E       F T K V L R N I Y D R H S G T M E M M A R S V F S L R
UniRef90_U5H4N7          P       E I K T L E G N D E L C S A M S K M V E E H R D N I P I L A K G F Q E T R
UniRef90_K3X8C8              N P P S T P E E D L I F T E A I K K A K G R G T N L V P L I C G G L N E M K
UniRef90_R7QR55          P       P I T S L G Q E A F C E L L K K I V S D S A E V V Q L V A G F L Q S R
UniRef90_B8CDF6          D K H P P T Q E E W E E H F A K I L E N I Y E R H S S V L V Q M A R G A F E L R
UniRef90_V2XW89          P       T P T T L D E N A L F A A E L E D V V G R H A N D I P T M A K G F Q E C S
UniRef90_W7TRD2          P       K P M D S E Q E Y D F T C L L A S I L C D H T S I P R A L A H G I Q E Y R
UniRef90_H2ANF4          P       S I R T L D D N L R F V N F T K R L L R R F N T N S P H L V M G A L E C
UniRef90_T2MJL2          H V S E I D N L E K E R E Y S F L L S Q L L N D H K D V V T Y L A K A F R Q V K
UniRef90_S7ZDA1          A E W P P E L N D Y N Q R F S H T L Q Q I K R R H D S V V T T V A Q G I L E W K
UniRef90_UPI00042C069A   H E K S P E D Q K A L S D F V D T L I T V R N R H H N V V P T M A Q G I L E Y K
UniRef90_G8ZXW0          P       T I R T I D D N W R F A A F L R Q I L Q D F N S N L P H L I M G A L E C
UniRef90_A7TR43          P       K I D T I E D T Y E F T K F L Y L I L Q D F N S N L P H M I M G A L E C
UniRef90_E2LDY9          P H W P P V I R E Y N Q N F T H I L H R I K S R R D G V L S S L S D G V S E W K
UniRef90_L1IIA2          P K V V N I N Q D       E Q F V L L L K E L V Q E G V Q V V P L L A R G I Y E A S
UniRef90_E3S5Z2          P       E I K S L E D N E K Y C K V L E E T V T E H A T V I P R L A I G V L E V R
UniRef90_A3GH34          S L N P P T T L E E N E K F T K V L S E F I D A H A D T L P S L S K G F Q E V S
UniRef90_G2WUK2          K       E V K T L E E N D H L C S I I G K M L K T H L T V I P K L A M G I L E S N
UniRef90_M0TPE3          F S C A P
UniRef90_M0TPE3          F S C A P
UniRef90_Q6FU21          P A V R T L D D S I       R F T K F A R D I L K D F N T N L P H L I M G A L E C
UniRef90_B7G0X2            D K L I Q S A E Q E E G F A A L I E N I Y D R H S K V L V Q M A Q G A Y E F R
UniRef90_F7EDQ5          P       P I S N H E T E S Q Y C K L L R Q L L D D H K D V V T Q L A E G M R E S R
UniRef90_D2W1X1          K S     K P R N R S E E I E F T N V I R T I Y D R H N P T M V S V A G G V A E L K
UniRef90_G2Y3R2          V R D I K T L E D N D K L C K V I S T T L Q E H L T V I P K L A M G V L E C R
UniRef90_T1FVF4          E       P V T N T S T E E Q F S E T I Q E M L D Y H K E V V S L L S Q G F K E A G
UniRef90_W2SNI0          E N A G A S T E N I N A     F N E Q L Q S I L K R H A H V V E T M A E G L I E L R
UniRef90_V2XTF5          P P W P P V R E Y N Q N F T R I L Y R I K T R R G G I L S S L S D G V S E W K
UniRef90_W0VY92          E Y     P Y G L H N R N T V V K L L T N F L E E H Q D T L T L A I G F Q E V M
UniRef90_A0A044UWT9      E N S E P     T N E I I T S F N E N L G K V T L R H E N F I E K M A E V F N Q L K
UniRef90_UPI0004407557   P       D V K S L E E N A E F S T Q L E H L V H R H A N D I P T I A R G F H E C A
UniRef90_U5GY65          P V     I K T L E D N D R F C A F M Q S T L N R H R V V I P D L A I G I C E
UniRef90_N1QL16          P       P V R S L D D N D R F C E V I K S L L K D H L S V I P Q L A M G I L E I Q
UniRef90_Q6C5A5          K     P P Q T V E E N L H F V E R L K D L V Q T H S N T I P V L S R G F S E C Q
UniRef90_I2H5Y3          P G     I L T I E E N A I F T R M L I K I L H D F N S N L P H L I M G A L E C
UniRef90_V5FC97          G D W P P E L D D Y N Q R F A K L L Q Q I K R R H D G V V T T V A Q G I L E Y K
UniRef90_G4ZD84          T K P P S T I A E D R Q F T E T L R Q A K A R G S N L V P L I C Y G L Q Q L K
UniRef90_F4R5Y3          N W P P E V Y D Y N E K F T Q T L S V I K R R H D P V V T T V A Q G I L E Y K
UniRef90_C5M4L3          S T Y T P H T L E E N L K F S E V L T K F I D V H A D T L P S L S K G L T E V S
UniRef90_A5D9U7          S L D A P T T A Q D N E K F V E T L E D F I E V H A D T L P V L S K G F T E V L
UniRef90_UPI00044495A9   G D Q K A R M L E E N E R F A G M L E G L V R N H A N D I P T I A K G F Q E S Q
UniRef90_X6P7K8          P       E P S D D V S L E I F V K G V E S H F K S L A N A T E L L A A G I T E C H
UniRef90_A0A024S558      P R P R
UniRef90_A0A024S558      P R P R
UniRef90_L1K237          E V     P R H S R A E E S F S A M L I D I K E K H R M V Q A N I A D G F L E M N
UniRef90_W4GEM9          K A     P S T P E E D A I F T S R I T Q M K K Q G S N L V P M I C G G L H T I K
UniRef90_D8LK85          P V     P D G P G D D Q Q F A D F L S S L L M D H T C V P Q A L S R G V L E L Q
UniRef90_M7SC94          G D W P P E L Q A Y N S R F A E T L H K V K R R H D G V V T T M A Q G I L E Y K
UniRef90_E3L4C7          V W P P E V H D Y N E R F T Q T L S V I K R R H D P V V T T V A Q G I L E Y K
UniRef90_B4DLP2
UniRef90_Q6FLT2          E F     P Y A L H D K D I I H G L L I E F L D D H Q D T V E T L S R G L E I M
UniRef90_G4ZD85          T K P P T T I S E D R Q F T E N L R Q A K L R G S N L V P L I C Y A L Q Q L K
UniRef90_A8PSE3            S K I E S D E Q N Q H L I D I V V T H L L S E R K S K L D L T A G I C R E C
UniRef90_T0QFM6          K V     I L T E E D A V F T T M I R A M K K G S N L V P L I C G G L Q E V S
UniRef90_W2NDF6          K     S P T N A A E D L V F T Q K I R N A K E R G S N L V P L I C Y G L Q E L K
UniRef90_W9W6B6          P V     I R T V K E N D E F C K V I S D S L K E H L A V I P N L V M G V L E C Q
UniRef90_D8LL33          P L P T T P Q E E Y N Y S C L L     S S L L L D G Q S I P R A L S I G L Q D F H
UniRef90_U7PL24
UniRef90_U7PL24
```

```
                                    130            140            150            160
UniRef90_Q6BXJ3          R F L G V          E Q I K Q F L D Q H L K E R I C M R L V A H Q H I E L S N T
UniRef90_I8TUQ2          R K R Q R L Q I D S T    V Q S F L D R F Y M S R I G I R M L I G Q H I A L T E Q
UniRef90_F8NNC8          L S L S S P H L P P D S L D S F M S R M L V S R I S R R V L A E H H I A L S K S
UniRef90_J7S8H4                T I L D L Y P T E K M D E L L S D L L R A R I S R R L I V E E H L S V T A N
UniRef90_M1VYF7          R R R Q R M Q I D G T    I Q S F L D R F Y M S R I G I R M L I G Q H I A L T D Q
UniRef90_F0YQR7          A R V G A A F E D D A S I  H G F L D S F Y T S R I G I R M I I G Q Y V A L
UniRef90_D3PH40          K Y I K      D E E I I K K Y L D Y N L T A R L V A H H L H L
UniRef90_G3AJ43          N L L        T H Q Q I K E F L D G H L R E R I S M R L I A H Q H L E L T K S
UniRef90_UPI000455F671   R Y M S P T Q      I S S F L D G A I R N R M G V R L I A E Q H I A L S R A
UniRef90_D5G730          R K R Q R M Q I D N S    I Q S F L D R F Y M S R I G I R M L I G Q H V A L N S A
UniRef90_K0KNE9              I L D A M P P N Q L D E L V S S L L R A R I S R R L I L E E H L S L T K N
UniRef90_L1JQ95          R E H I P G S I A S F D F G Q F L D R F Y L S R V G M R V L V G Q H I M L H H P
UniRef90_G0WG24          V L      D L L P R E E I D S L L S S L L R A R I S R R L I V E E H L S I T A N
UniRef90_A0A059LS92      S    K P L V G S A L Q L D A F L D G M L R S R I S R R V L A E Q H L Q L   E S
UniRef90_N1JH65          R K R Q R M  R I D H N I Q A F L D R F Y M S R I G I R M L I G Q H I A L T D P
UniRef90_Q6CUD8              I L D L Y P Q D K M D A L I S D L L R A R I S R R L I V E E H L S I T S N
UniRef90_G8JR19              I L D L Y P Q K Q M D E L I S S F L R A R I S R R L I V E E H L S V T S N
UniRef90_A0A024JEL6      E Y I S P A E S S      K I I D S H L R A R I G T R L L A E H H I A L T D P
UniRef90_G6D074          E S H E V D P G I E N S I Q Y F L D R F Y M S R I S I R M L I N Q H T L L F G E
UniRef90_R1EXG7          R K Q Q R M Q  I D H N I Q A F L D R F Y M S R I G I R M L I G Q H I A L T D Q
UniRef90_E3KAA6          R Y L S      E E Q I S S F L N R A I Q S R I S I R L I A E Q H L S L S K A
UniRef90_R0KPS6          R K R Q R M Q  I D H N I Q A F L D R F Y M S R I G I R M L I G Q H I A L T D Q
UniRef90_C4Y831          H L V S P      E Q I K A F L D E H L R E R I S M R L I A H Q H I S L T D A
UniRef90_S3CQ88          R K R Q R M Q I D N  N I Q A F L D R F Y M S R I G I R M L I G Q H I A L T D Q
UniRef90_E4WTH8          D H V G D E G K A H E L V Q S F L D K T L T S R L G I R L L A Q H H L L L K D Q
UniRef90_L1K0L0          D  V S R F L L V P F D F G Q F L D R F Y L S R V G V R V L I G Q H I M L H H P
UniRef90_M2RL84          G L I K P      E E T D K F M T T M L R S R I S R R V I A E Q H L A L T E T
UniRef90_M2LMB8          R K R Q R M Q  I D H N I Q A F L D R F Y M S R I G I R M L I G Q H I A L T D Q
UniRef90_L1JNM9          Q E V G P E R Q L Q A D I D R V L T S F Y T S R I G V R F L M E H H I T
UniRef90_UPI0003991E72   E A Y G D D P V T N Q N I Q Y F L D R F Y L S R I S I R M L N Q H T L L F D G
UniRef90_J4G631          P Y L D P D R      L D P F M H R M L V S R I S R R V L A E H H I A L S
UniRef90_C5E2P8              I L D L Y P P E K M D E V I S S L L R A R I S R R L I V E E H L S I T S N
UniRef90_G3BFW2          H L V S T D R      I K Q F L D E H L R E R I S M R L I A H Q H I Q L S K A
UniRef90_D8M4J4          Q R L Q E K G A V E N E L K P Y L D S F Y T S R I G I R I L L E Q H L S L E E Q
UniRef90_U5H4N7          R Y L      A D T A V T Q F L D R A I R D R I S L R L M A E Q H L S L S S A
UniRef90_K3X8C8          Q T D L G N S S V Q D D I K D R L D T F F L S R I G I R M L I G Q H V
UniRef90_R7QR55          M G L H K N Q H L H V Q L Q E W V E I L M A S R I G R R V L A E Q H I A L H E A
UniRef90_B8CDF6          R D  A V E F E L M E S T H A F L D R F Y I S R I G I R V L I G Q Y L S L
UniRef90_V2XW89          K Y L S P      S Q I N E F L D G A I R N R L S V R L I A E Q H V A L S H A
UniRef90_W7TRD2          A D M S Y E D P D R E S I Q T L T G F Y T A R I G L R F L V E H H I  V S N D
UniRef90_H2ANF4              T I L D L Y P T D K M D N L L S E L L R A R I S R R L I A E E H I S I T N N
UniRef90_T2MJL2          K F      V P Y E V L G D L A E R T L T S R L G I R L L A E H H L A L
UniRef90_S7ZDA1          R E R Q R M Q I D P T    I Q S F L D R F Y M S R I G I R M L I G Q H I A L T E Q
UniRef90_UPI00042C069A   D G C T V D P V T N Q N L Q Y F L D R F Y M N R I S T R M L M N Q H I L I F S D
UniRef90_G8ZXW0              T I L E L Y P Q D K M D E L L S S L L R A R I S R R L I V E E H L S I T S N
UniRef90_A7TR43              I V L D L Y P Q D E M D E L L S E L L R A R I S R R L I V E E H I G I T S N
UniRef90_E2LDY9          S A F L R G S K P P M L L Q Q W L S K F H L S R I G L D F L V A Q H I A L T T R
UniRef90_L1IIA2          L R V S T E R L      N C N K F L A D M I M S R I S R R V I A E Q F I A L H H
UniRef90_E3S5Z2          G L M K P      E D T D K F M T T M L R S R I S R R V I A A Q H L A L T E T
UniRef90_A3GH34          D L L      T S K Q I T A F L D E H L K E R I S M R L I A H Q H I E L S K S
UniRef90_G2WUK2          G H I      D P A V L D H F M N T I L R S R I S R R V I A E Q H L A L T E T
UniRef90_M0TPE3
UniRef90_M0TPE3
UniRef90_Q6FU21              T T L D L Y P T D K M D K L L S D L L R A R I S R R L I V E E H I S I A D N
UniRef90_B7G0X2          S A V R Q E K G A D E E T H R F L D R F Y L D R I G I R V L I G Q Y L A L
UniRef90_F7EDQ5          K H I Q M F S L S F Y F Q P D F V  G I I C T R L S P K K I I E
UniRef90_D2W1X1          E E L K I D Y T N Y S S L K D H L D S F Y I N R I G I R T L L E H H L S L H D Q
UniRef90_G2Y3R2          D L M N P S D M D K F M N T I L R S R I S R R V I A E Q H L A L T E T
UniRef90_T1FVF4          K Y I E      D K K L I A T F L D D M M K S R L G M R L L C D H H L Q I
UniRef90_W2SNI0          E T D G V D I A S E K C L K Y W F D R Y Y L T S P S M K L E M H N A V
UniRef90_V2XTF5          S A F L R G S K P F P M I Q Q W L S K F H L S R I G L D F L V A Q H I A L T T G
UniRef90_W0VY92          R F Y      D Q E H V F N F L N L H L R N R I S M K M L A T H Y L S L L D Q
UniRef90_A0A044UWT9      Q K H G I N I A L N N R I Q Y L L D R L Y F K V I S I R I M Q H Q H L T I F G A
UniRef90_UPI0004407557   R Y M S Q D A      I S E F L D H A I R N R I A V R L I A E Q H I A L S
UniRef90_U5GY65              T S P H H L G P R E V D R I M T R M L R S R L S R R V I T E Q H I G L T H Q
UniRef90_N1QL16          H S V S S      E E C D R F M T T L L R S R I A E Q H L A L T E T
UniRef90_Q6C5A5              N L M P L S Q I N T L L N S H L N A R M G T R L L A E H H I A L T N P
UniRef90_I2H5Y3          M I L G L Y P S N K M D E L V S Y L L R A R I S R R I A E E H I S I T E N
UniRef90_V5FC97          R Q R Q R  L Q I D S N I Q S F L D R F Y M S R I G I R M L I G Q H I A L T E Q
UniRef90_G4ZD84          H S A L Q M Q S A Q E D I K D R L N K F F L G R I G I R M L I G Q H V
UniRef90_F4R5Y3          E F L S G P A K T D R S I Q T F L D R F Y M S R I G I R M L I G Q H I A L
UniRef90_C5M4L3          H L L S T K T      I T E F L D Q H L K E R I S M R L I A H Q H I E L T R T
UniRef90_A5D9U7          H L I S      Q E Q V T H F L D N H L R E R I V M R L I A H Q H V Q L T K T
UniRef90_UPI00044495A9   R Y M S P      E R I S S F L D A A I R N R V A V R L I A E Q H I A L T H A
UniRef90_X6P7K8          P S Q A T Q V R T C K F L N G F L D R F H T S R I G T R L L T G Q L C A L Y A Q
UniRef90_A0A024S558
UniRef90_A0A024S558
UniRef90_L1K237          R A G V P K A V E S D E I Q Q L L N R F Y T G R I G I R L L I D Q H L S L
UniRef90_W4GEM9          T T P R R L Q D V Q D D L N T R L D T F F L S R I G I R M L I G Q H
UniRef90_D8LK85          E K G E V G L I Q R H R I D R L L D N F F I S R I S L R F L V D T Y I S  S K K
UniRef90_M7SC94          R K R Q R L Q I D N  N I Q S F L D R F Y M S R I G I R M L I G Q H I A L T D Q
UniRef90_E3L4C7          D F L A S P S V I D R S V Q T F L D R F Y M S R I G I R M L I G Q H I A L
UniRef90_B4DLP2                  L D R F      Y L S I R M L I N Q H T L I F D G
UniRef90_Q6FLT2          D F L E K D T      I F K F L D E H L R D R I A M K I L A T N H L A V S N H
UniRef90_G4ZD85          A K D L Q L E S V Q E D I T D R L D K F F M G R I G I R M L V G H Y V E S L E Q
UniRef90_A8PSE3              I Y Y M E P E A V N L F L A R M L R S Q I S R E V L A K Q H I A L S
UniRef90_T0QFM6          H T E G R N A L R L Q E I Q D R L D T F F L S R I G I R M L I G Q H
UniRef90_W2NDF6          Q S A L Q L E S V Q E D I K D R L D K F F F L G R I G I R M I I G H H V
UniRef90_W9W6B6          D L V S P D T      M D H F V Q A M L R A R I S R R V I A E Q H L A L T E T
UniRef90_D8LL33          K Q D G V D P A V R L D I Q E A I S R F Y T G R I G V R F L I E H H V S
UniRef90_U7PL24
UniRef90_U7PL24
```

```
UniRef90_Q6BXJ3          L R D
UniRef90_I8TUQ2          T H V R H
UniRef90_F8NNC8
UniRef90_J7S8H4          F L S G
UniRef90_M1VYF7          S H
UniRef90_F0YQR7
UniRef90_D3PH40
UniRef90_G3AJ43          I N N P D
UniRef90_UPI000455F671
UniRef90_D5G730          P E Q E D
UniRef90_K0KNE9          F N S
UniRef90_L1JQ95
UniRef90_G0WG24          Y L S G
UniRef90_A0A059LS92      A R P G
UniRef90_N1JH65          S C N K D
UniRef90_Q6CUD8          Y L S G
UniRef90_G8JR19          Y M S G
UniRef90_A0A024JEL6
UniRef90_G6D074          N E L G
UniRef90_R1EXG7          R Q R G D
UniRef90_E3KAA6          E H S P S
UniRef90_R0KPS6
UniRef90_C4Y831
UniRef90_S3CQ88          S H N K D
UniRef90_E4WTH8
UniRef90_L1K0L0
UniRef90_M2RL84          F N S P
UniRef90_M2LMB8
UniRef90_L1JNM9
UniRef90_UPI0003991E72   S T N P
UniRef90_J4G631
UniRef90_C5E2P8          Y H S G
UniRef90_G3BFW2          L K E G
UniRef90_D8M4J4          M K N P
UniRef90_U5H4N7          S M P
UniRef90_K3X8C8
UniRef90_R7QR55          V Q Q G N
UniRef90_B8CDF6
UniRef90_V2XW89          I N S
UniRef90_W7TRD2          A R E G
UniRef90_H2ANF4          Y M S G
UniRef90_T2MJL2
UniRef90_S7ZDA1          T H V K H
UniRef90_UPI00042C069A   S Q T G N
UniRef90_G8ZXW0          Y A S G
UniRef90_A7TR43          Y F S G
UniRef90_E2LDY9          P P H P N
UniRef90_L1IIA2
UniRef90_E3S5Z2          F N S P
UniRef90_A3GH34
UniRef90_G2WUK2          F
UniRef90_M0TPE3
UniRef90_M0TPE3
UniRef90_Q6FU21          Y F S G
UniRef90_B7G0X2
UniRef90_F7EDQ5
UniRef90_D2W1X1          V E N P N
UniRef90_G2Y3R2          F H S
UniRef90_T1FVF4
UniRef90_W2SNI0
UniRef90_V2XTF5          P P R P S
UniRef90_W0VY92          S N P G N
UniRef90_A0A044UWT9      L L P
UniRef90_UPI0004407557
UniRef90_U5GY65          L R D
UniRef90_N1QL16          Y H S P
UniRef90_Q6C5A5
UniRef90_I2H5Y3          F S K G
UniRef90_V5FC97          K A V K H
UniRef90_G4ZD84
UniRef90_F4R5Y3
UniRef90_C5M4L3          L N D P S
UniRef90_A5D9U7
UniRef90_UPI00044495A9
UniRef90_X6P7K8          Y Y G K N
UniRef90_A0A024S558
UniRef90_A0A024S558
UniRef90_L1K237
UniRef90_W4GEM9
UniRef90_D8LK85          N K P G
UniRef90_M7SC94          S H
UniRef90_E3L4C7
UniRef90_B4DLP2          S T N P
UniRef90_Q6FLT2          N R D S D
UniRef90_G4ZD85
UniRef90_A8PSE3
UniRef90_T0QFM6
UniRef90_W2NDF6
UniRef90_W9W6B6          F N S P
UniRef90_D8LL33
UniRef90_U7PL24
UniRef90_U7PL24
```

```
                              1         10        20        30        40
UniRef90_C0SBR7
UniRef90_B8NGD9
UniRef90_G8ZZN8             L I Q D Y A K K P I Q P I T Y E Y L T R Y K P P L R D N T E Y M L N L L
UniRef90_M7WS79          L K R Q I A H Y A S F P Q T G V S L R Q M V M F G G N P L R A S Q F L L D E L P
UniRef90_S8AVQ7
UniRef90_S8AVQ7
UniRef90_T1KZV8                 R L T P A T L L Y A G K S P D G S H L L R S A Q Y L H K E L P
UniRef90_D7G2U8                                                   L Q S A Q Y L H R E L P
UniRef90_N1Q303          L M E T I K H Y S N F P A T G V S L R Q M V Q F G S N P S T A S Q F L S E E L P
UniRef90_N1Q303          L M E T I K H Y S N F P A T G V S L R Q M V Q F G S N P S T A S Q F L S E E L P
UniRef90_F0XTU5          L M D T I M H Y A S F P A T G V S L R Q M V Q F G E R P S R A S Q F L A E E L P
UniRef90_F0XTU5          L M D T I M H Y A S F P A T G V S L R Q M V Q F G E R P S R A S Q F L A E E L P
UniRef90_U5HD51             K Q I V H Y A S F S Q T G V S L R Q M V K F G Q N P L R A S Q F L L D E L P
UniRef90_B2B7P6
UniRef90_C6HK64          L M E T I R H Y A S F P A T G V S L R Q M V Q F G D R P S T         V L V R E L P
UniRef90_C6HK64          L M E T I R H Y A S F P A T G V S L R Q M V Q F G D R P S T         V L V R E L P
UniRef90_UPI0003C4A112          R L T P T M M L Y S G R S Q D G S H L L K S A R Y L Q Q E L P
UniRef90_B6QK25               I K H Y A S F P A T G V S L R Q M V Q F G E T P S R A S Q F L S E E L P
UniRef90_B6QK25               I K H Y A S F P A T G V S L R Q M V Q F G E T P S R A S Q F L S E E L P
UniRef90_G1XG26
UniRef90_S9PY22         L Q E K V N L L A Q Y P Q T G L S L K Q L V Y F G Q R L F R S G L F L R D E L P
UniRef90_A7TPP0          L I Q D Y A K K P I P K L T Y Q L L T E Y K P P L T D N D N F M L N L L L
UniRef90_G7DSW5
UniRef90_G7DSW5
UniRef90_G3J2S1          L M D T I R H Y A Q F P A T G V S L R Q M V Q F G D K P S T A S Q F L S E E L P
UniRef90_G3J2S1          L M D T I R H Y A Q F P A T G V S L R Q M V Q F G D K P S T A S Q F L S E E L P
UniRef90_F9WGV9             Q F Y A V Q K V Q P L A L S N M L R I Q T H E Y S H A R I V R R E Y L
UniRef90_UPI0000D873B2
UniRef90_Q6CB64
UniRef90_Q6CB64
UniRef90_F4RUB7                      I T L E R L L R F C P P L S R S A E L T R V E L T
UniRef90_F8WEJ6         V P G Q V D F Y A R F S P S P L S M K Q F L D F G S C E K T S F M F L R Q E L P
UniRef90_J0HGR0          L M D T I S H Y A S F P A T G V S L R Q M V Q F G H R P S T A S Q F L S E E L P
UniRef90_J0HGR0          L M D T I S H Y A S F P A T G V S L R Q M V Q F G H R P S T A S Q F L S E E L P
UniRef90_G8BPL5           L I Q D Y A N K P I P P L S Y D F L T S F K P P L T D N D M Y M F N L L L
UniRef90_R4XDN3           L L R H F A A R E L H C I N L G T L L D R T N H L D S A L W H A T E E L P
UniRef90_F2UK82         R N I R D M A R K P T H A L S L W Q L A E K E D P P H E S A K L L S A Q L L
UniRef90_U4LIZ7         L M D T I T H Y S T F P A T G V S L R Q M V Q F G Q N P S Q G A Q F L S E E L P
UniRef90_U4LIZ7         L M D T I T H Y S T F P A T G V S L R Q M V Q F G Q N P S Q G A Q F L S E E L P
UniRef90_S9WB08            Q F Y A A Q K L K P I P M E N L M Y I S K P L L A H A I A V H R E Y L
UniRef90_R8BQ05                                                 R L I S S A N Y V R T E L P
UniRef90_G8Y027       R L I Y K Y A N R P I D Q L S M S E L Y A Q S R   E L S E A T F I D R T L L
UniRef90_T1FYR9                 R L M P L T M L Y S G K S P D N S H L V K S A Q Y L Q R E L P
UniRef90_C5DBM7          L I Q D F A K K P I P P L S Y E F L T Q Y K V P L T E N Q K Y T L N L L L
UniRef90_UPI0001CBB4B8
UniRef90_S8E1W0        E R I H H Y A S F P Q T G V S L Q Q M V L F G G N P S Q A S Q F L L E E L P
UniRef90_K3WU04          E V Y R L H H V P L P A I T L Q E L L K R G A R A T T S A Q L L H R E V P
UniRef90_UPI000440860D     R I H H F A S F P Q T G V S L Q Q M V L F G G N P S K G S Q F L L E E L P
UniRef90_A0A024JDE5
UniRef90_A0A024JDE5
UniRef90_X8JNH9        E K I H H F A A F P Q T G V S L Q Q M A L F G K N P L K A S Q F L S E E L P
UniRef90_G4T7P2          K I Y H F A S F P Q T P V S L Q Q M V L F G G N P L K A S E F L K E E L P
UniRef90_K5X522
UniRef90_K5X522
UniRef90_V2XB76
UniRef90_V2XB76
UniRef90_D8QDZ5
UniRef90_D8QDZ5
UniRef90_G3AJ72           K I F Q Y A A H N Q T P V S L R Q M V Q F G P S P S P A S K F I V E E L P
UniRef90_G3AJ72           K I F Q Y A A H N Q T P V S L R Q M V Q F G P S P S P A S K F I V E E L P
UniRef90_D6RKY6        V T A L L A Q Y G T A A P R P L N L S Q L L S F G R P V L S S V S Y V L Y E L P
UniRef90_C4QWE7
UniRef90_C4QWE7
UniRef90_M5GAE1
UniRef90_R7SP18
UniRef90_R7SP18
UniRef90_UPI000440AD58     K I H H F A S F P Q T G V S L Q Q M V L F G G N P L K A G Q F L K E E L A
UniRef90_I4Y7Y3           K L L H F S S F P Q T G I S L Q Q M V M F G S N P L R A G N F L S E E L P
UniRef90_I4Y7Y3           K L L H F S S F P Q T G I S L Q Q M V M F G S N P L R A G N F L S E E L P
UniRef90_C5FN54        L M E T I R H Y A S F P A T G V S L R Q M V Q F G D K P S T A S Q F L S E E L P
UniRef90_C5FN54        L M E T I R H Y A S F P A T G V S L R Q M V Q F G D K P S T A S Q F L S E E L P
UniRef90_W6MNN4           E E I Y K Y A K F P P T G V S L R Q M V Q F G P K P S H A S Q F V V E E L P
UniRef90_A9UU04                                             S A Q V L H R N L P
UniRef90_G8JTT0           L I Q D Y A K R R L P P I T Y D F L T Q Y I P P L S E N E K Y V F N I L L
UniRef90_J3PXD5
UniRef90_B8BTL2                                       L R N A Q F L H R E L P
UniRef90_I1C9D5                                                     E E L P
UniRef90_R1DE73            D I D Q L A R Q P M T S L S L N D L Y R V A S S P L L N A Q F V R R E L P
UniRef90_A0A058Z1K4   L A D K I R H Y A S F P Q R S V T L R Q M A E F G A S A S E N G E A L Y S E T L
UniRef90_UPI0004561005       Q L H H F A T F Q Q T G I S L R Q M V Q F G R N P L Q A G S F L A E E L P
UniRef90_UPI0004561005       Q L H H F A T F Q Q T G I S L R Q M V Q F G R N P L Q A G S F L A E E L P
UniRef90_UPI000455E09E     R I H H F A S F P Q T G V S L R Q M V F G Q N P L K A S E L P
UniRef90_J5RR44          L I Q D Y A S K P I A P L T Y E Y F L Q Y R P P L T K K E E Y M L N L L L
UniRef90_G4YN76          E V Y R L H H I P L P P I T L Q A L L K R G P S A S T S A Q L L H R E V P
UniRef90_M3IGK8        L K D K I F K Y A S Y P Q T P I S L R Q M V Q F G P S P S P A S K F I V E E L P
UniRef90_M3IGK8        L K D K I F K Y A S Y P Q T P I S L R Q M V Q F G P S P S P A S K F I V E E L P
UniRef90_B4DEF3        A P K Y I E H F S K F S P S P L S M K Q F L D F G S C E K T S F T F L R Q E L P
UniRef90_R9AI54           K L L H F S S F P Q S G I S L Q Q M V M F G S N P L R A G N F L S E E L P
UniRef90_C4QWQ0           K L A S Y P L P Q T T L N D L L R F N S K V I T N A N D T L K D M L
UniRef90_I2CP20                                       L L R M A T F L H R E L P
UniRef90_M5G1K9
UniRef90_M5G1K9
```

```
                                           50            60             70          80
UniRef90_C0SBR7                                                          R R Y F V A T D D G
UniRef90_B8NGD9                                                          R R Y F V P S D D Q
UniRef90_G8ZZN8        S Y T C R Q L D A I Q K L P Y I V V L N P N I E I S N S L Y L K T L E T L L S I
UniRef90_M7WS79        H G Y A Q S F E E L V S L P Q H L S E P N Q L K S K Q G R Q K M P L H R Y Y S N
UniRef90_S8AVQ7                                                        H S R Y Y A T I D E G
UniRef90_S8AVQ7                                                        H S R Y Y A T I D E G
UniRef90_T1KZV8        V R I A H R I A G F R E L P F I V G C N P T I L G V H E Q Y I Q A F Y Q V T E F
UniRef90_D7G2U8        V R L A Q A V T A L D K M K D G L T S T L P V K R V R E D Y L Q N F R E L Q E S
UniRef90_N1Q303        I R L A H R V Q E L G D L P D G L N E M E S I K R V Q D W Y A Q S F E E I T T L
UniRef90_N1Q303        I R L A H R V Q E L G D L P D G L N E M E S I K R V Q D W Y A Q S F E E I T T L
UniRef90_F0XTU5        I R L A H R V E E L E N L P D G L G D M P S V R K V Q D W Y A Q S F E E I T T L
UniRef90_F0XTU5        I R L A H R V E E L E N L P D G L G D M P S V R K V Q D W Y A Q S F E E I T T L
UniRef90_U5HD51        H S Y A E S F E E L V N L P E S V P N R P S D S K V T S L Q H R Y Y T D P D S S
UniRef90_B2B7P6                      M Q K L P Y V V V T N K H F N E V Y D L Y Y T A F D T F R
UniRef90_C6HK64        I R L A H R V Q E L G D L P D G L N E M P S I R K V R D W Y A Q S F E E I I N L
UniRef90_C6HK64        I R L A H R V Q E L G D L P D G L N E M P S I R K V R D W Y A Q S F E E I I N L
UniRef90_UPI0003C4A112 V R I A H R I K G F R S L P F L I G C N P T I L H V H E L Y I R A F Q K L T D F
UniRef90_B6QK25        I R L A H R V E E L N H L P D G L N E M P S I K K V K D W Y A Q S F E E I I N V
UniRef90_B6QK25        I R L A H R V E E L N H L P D G L N E M P S I K K V K D W Y A Q S F E E I I N V
UniRef90_G1XG26              L Q G L Q A G S S G S Q R P Q D V D D E N S R Y Y A T I D E G
UniRef90_S9PY22        I R L A H R I Q D L Q N L P K C L P K H K R Y P K A P K W R A S F F H N F V Q H
UniRef90_A7TPP0        S Y T C R R L N A L Q Q L P Y I A V L N P N I E I S N S L Y L K T L Q S L L S I
UniRef90_G7DSW5                                                        V E H R Y Y A N F H T   Q D
UniRef90_G7DSW5                                                        V E H R Y Y A N F H T   Q D
UniRef90_G3J2S1        I R L A H R V R E L E D L P D G V N D M P S V I K V K D W Y A Q S F E T P P T Q
UniRef90_G3J2S1        I R L A H R V R E L E D L P D G V N D M P S V I K V K D W Y A Q S F E T P P T Q
UniRef90_F9WGV9        V R V A K R A R A L S H A P V G L S Q M R S I Q E L R R W Y E W S F H D V K S I
UniRef90_UPI0000D873B2                                                  N R R Y F V A A D D G
UniRef90_Q6CB64                                              Q K T V N R R Y Y A N V S P E V
UniRef90_Q6CB64                                              Q K T V N R R R Y Y A N V S P E V
UniRef90_F4RUB7        Q R L E R R V K V Q L S L P Y L P A S N P H T S E V M S I Y T N A L T G L R E
UniRef90_F8WEJ6        V R L A N I M K E I S L L P D N L L R T P S V Q L V Q S W Y I Q S L Q E L L D F
UniRef90_J0HGR0        I R L A H R V K E L G D L P D G L N D M P S I R K V Q D W Y A Q S F E E I I S L
UniRef90_J0HGR0        I R L A H R V K E L G D L P D G L N D M P S I R K V Q D W Y A Q S F E E I I S L
UniRef90_G8BPL5        A Y T S R R L K A I Q N L P Y I A V V N P N V E E S N S L Y L K T L T S L L S I
UniRef90_R4XDN3        T R L A H R I D D L D S L P K Q L R T N V S V D T V R K W Y E K S F N D L L N T
UniRef90_F2UK82        P R I A Q R L L Q F Q Q L P F I V G S N P Y I K H V H I Q Y Y D A F H N L F M M
UniRef90_U4LIZ7        I R L A H R V K E L N Q L P D G L N E M P S I Q K V A N W Y A Q S F E E I T Q L
UniRef90_U4LIZ7        I R L A H R V K E L N Q L P D G L N E M P S I Q K V A N W Y A Q S F E E I T Q L
UniRef90_S9WB08        V R M A K R A R Q L S L A P Y G L S Q M P S I L E L K K Y Y Q L S F H D F R S A
UniRef90_R8BQ05        T R L A H R I R D M Q Q L P Y V V V T N P H I S E V Y D L Y Y T A F D T F R K V
UniRef90_G8Y027        V F N A R G I G K F R R L P Y L V V L N P S I C E S Y N I Y L K T M S D L L K G
UniRef90_T1FYR9        I R F A H Q V S R F R K L P F I A G V H P L I L E V H D L Y I R S F H N L N N F
UniRef90_C5DBM7        M Y T C R R L V A I Q R L P Y I A V L N P N I E Q T N R L Y L R T L E S L L S L
UniRef90_UPI0001CBB4B8                P L F T L F S I S A V R L R Y L K T L Q D L L E F
UniRef90_S8E1W0        V R L A H R V K E L D Q L P H N L S A M P S I N R V K E W Y A Q S F E E L I S F
UniRef90_K3WU04        I R L A R R I V D L E N L P D E L P D A P S I V K L R N K L L A S F D E L I S F
UniRef90_UPI000440860D I R L A H R A K E L D E L P H N L S D M P S I K K V K N W Y C Q S F E E L I N F
UniRef90_A0A024JDE5          K D V A I Q P E P A R I T H P L N K M Q S Q D K H Y Y T S V D A D
UniRef90_A0A024JDE5          K D V A I Q P E P A R I T H P L N K M Q S Q D K H Y Y T S V D A D
UniRef90_X8JNH9        V R L A H R I R E L D E L P H N L R D M P S I K K V K N W Y A Q S F Q E L I E F
UniRef90_G4T7P2        I R L A H R V K D L T E L P Q G L S E M P S I I R V K E W Y A Q S F E E L V N F
UniRef90_K5X522              L P Y S V N G N G N H Q K M R I P M E R R Y F A N T S G
UniRef90_K5X522              L P Y S V N G N G N H Q K M R I P M E R R Y F A N T S G
UniRef90_V2XB76                                              K R Y F A A S L P E
UniRef90_V2XB76                                              K R Y F A A S L P E
UniRef90_D8QDZ5                                                          M E G
UniRef90_D8QDZ5                                                          M E G
UniRef90_G3AJ72        I R L A K K V K D L E Y A P Q G L N E S P S T I K V K N W Y A Q S F Q E L T E L
UniRef90_G3AJ72        I R L A K K V K D L E Y A P Q G L N E S P S T I K V K N W Y A Q S F Q E L T E L
UniRef90_D6RKY6        R R L A T R V R Y L E S L P F I V G T N P Y V A K T L K A F R E G F W V L A T H
UniRef90_C4QWE7                                              K K Y Y L S C P S N
UniRef90_C4QWE7                                              K K Y Y L S C P S N
UniRef90_M5GAE1            M A A R I R A L E S L P Y I V G V N P F I S R L Y T I Y R E S L D A L L R
UniRef90_R7SP18                                                        R R Y Y A N T S S V
UniRef90_R7SP18                                                        R R Y Y A N T S S V
UniRef90_UPI000440AD58 H R Y A Q S F E E L I N L P V R V S S M V P S S S S E E S Y L P S L E D L K D H
UniRef90_I4Y7Y3        I R L A H R C V E L N T L P N N L S Q M P S I Q R V L G W Y A H S F D E L I N F
UniRef90_I4Y7Y3        I R L A H R C V E L N T L P N N L S Q M P S I Q R V L G W Y A H S F D E L I N F
UniRef90_C5FN54        I R L A H R V R E L G D L P D G L N E M P S I K K V Q E W Y A Q S F E E V R A R
UniRef90_C5FN54        I R L A H R V R E L G D L P D G L N E M P S I K K V Q E W Y A Q S F E E V R A R
UniRef90_W6MNN4        I R L A H R V K E L E E L P N D L N K V E S I Q L V R D W Y A Q S F E E L T S L
UniRef90_A9UU04        I R L L F C I Q Q F L K L P F I V G C N P H F K H V H R T Y L R A H E N I N S F
UniRef90_G8JTT0        T L T C R R L A A I Q R L P Y I A V V N P N I E E S N R L Y L K T L E S L L S I
UniRef90_J3PXD5              S L P Y L P A S N P H I K E V M S I Y R H S L E E I N S L
UniRef90_B8BTL2        I R I A Q R A I D L L T L P H G L N R T R E V Q S I A N T Y L Q Y L Q Q L R D F
UniRef90_I1C9D5        P S I A N I I K S Q S S L         H R S G S I G H R Y Y T S L D D V E
UniRef90_R1DE73        I R Y A H R C A Q L R N L P F G L A A D E R I E H A A R T Y E Q Q A E A L   F
UniRef90_A0A058Z1K4    H D L S H       D C L P D N V A
UniRef90_UPI0004561005 I R L A H R V K E L D E L P H E L G T M P S I V K V K N W Y A Q S F E E L V N F
UniRef90_UPI0004561005 I R L A H R V K E L D E L P H E L G T M P S I V K V K N W Y A Q S F E E L V N F
UniRef90_UPI000455E09E V R L A H R V K E L D Q L P H N L S D M P S I K K V K N W Y A Q S F E E L I S F
UniRef90_J5RR44        S L T C K R L N A I Q R L P Y N A V I N P H I E K T N S L Y L K S L Q T L L S I
UniRef90_G4YN76        I R I A R R I V D L E N L P D E L P S A E P L V S L R E Q L L S S F D Q L V S C
UniRef90_M3IGK8        I R L A K K V K D L E N A P L G L N E M P S T I K V K N W Y A Q S F Q E L T E L
UniRef90_M3IGK8        I R L A K K V K D L E N A P L G L N E M P S T I K V K N W Y A Q S F Q E L T E L
UniRef90_B4DEF3        V R L A N I M K E I N L L P D R V L S T P S V Q L V Q S W Y V Q S L L D I M E F
UniRef90_R9AI54        I R L A H R C V E L N T L P N E L S E M P S I R K V L G W Y A H S F D E L V R H F
UniRef90_C4QWQ0        A L T A K R I R E L R S L P Y I C V L N A N I G T I Y D T Y L E S L Q L L L K F
UniRef90_I2CP20        I R F A R G I T F I D K L   D S S R Q A P S L R V V R E W Y R E S F R D V V S S
UniRef90_M5G1K9                                                          R R L Y S S P P E N
UniRef90_M5G1K9                                                          R R L Y S S P P E N
```

```
                                          90            100           110           120
UniRef90_C0SBR7          G D W P P E L N E Y N N K F S K T L Q H I K R R H D G V V T T V A Q G I L E Y K
UniRef90_B8NGD9          G N W P P E L N D Y N E R F A K T L Q H I K R R H D S V V T T V A Q G I L E W K
UniRef90_G8ZZN8          E Y     P Y G L H N R E T M I E L L T G F L D E H Q D T L V T L A R G F Q E V
UniRef90_M7WS79          P D W P P E V H D Y N E R F T R L L S N I K R R H D P V V T T V A Q G I L E F K
UniRef90_S8AVQ7          V R W P S E I L D Y N K K F T D T L K T I K K R H D P V L T T V A L G I N E Y K
UniRef90_S8AVQ7          V R W P S E I L D Y N K K F T D T L K T I K K R H D P V L T T V A L G I N E Y K
UniRef90_T1KZV8          P       E I T D L E T E K R Y T A M L R Q L L D T H K D V V T R L A E G F R E S R
UniRef90_D7G2U8          P       R P H E L E Q V A A F T E T V R R V Q K R G S D T V L Q M A C G L Q D L M
UniRef90_N1Q303          L K P S L T N E I R E
UniRef90_N1Q303          L K P S L T N E I R E
UniRef90_F0XTU5          P R P D L N R E T R E R L M
UniRef90_F0XTU5          P R P D L N R E T R E R L M
UniRef90_U5HD51          I K W P P E V H D Y N E R F T K L L S N I K R R H D P V V T T I A Q G I L E F K
UniRef90_B2B7P6          K V R E V K N L D D N D R L C A T I R T M L N A H L T V I P K L A M G I L E C N
UniRef90_C6HK64          P R P T L S Q E       V R T R L L R P T K L N G R D V
UniRef90_C6HK64          P R P T L S Q E       V R T R L L R P T K L N G R D V
UniRef90_UPI0003C4A112   P P
UniRef90_B6QK25          P K P S L S D E
UniRef90_B6QK25          P K P S L S D E
UniRef90_G1XG26          V R W P P E I L D Y N K K F T Q T L K T I K K R H D P V L T T V A L G I N E Y K
UniRef90_S9PY22          Y E W P E S L H K F N I S F S R L L D T I R T R H D N V A S E L A L D I Q E Y R
UniRef90_A7TPP0          E Y P Y G L H N K E N       M V K L L S G F L D D H Q D T L E T L S R G L Q E I
UniRef90_G7DSW5          V K W P P E V V D Y N E R F T K A L T M I K K R H D P V V T T V A Q G I L E Y K
UniRef90_G7DSW5          V K W P P E V V D Y N E R F T K A L T M I K K R H D P V V T T V A Q G I L E Y K
UniRef90_G3J2S1          E I T Q L A R P D L D K E T R D R L M K   P S R H A L M G G Y Q Q L S
UniRef90_G3J2S1          E I T Q L A R P D L D K E T R D R L M K   P S R H A L M G G Y Q Q L S
UniRef90_F9WGV9          K A       P V D T E S A L K F D T L L R R V L L R H Y N V S A L L S E G M H E L G
UniRef90_UPI0000D873B2   G D W P P E L R D Y N N R F A S T L H H I K R R H D S V V T T V A Q G I L E W K
UniRef90_Q6CB64          S S W P P E V Y E F N K T I T A T L Q K I K Q R H D P V V T T V A Q G I T E W K
UniRef90_Q6CB64          S S W P P E V Y E F N K T I T A T L Q K I K Q R H D P V V T T V A Q G I T E W K
UniRef90_F4RUB7          V L P I T S M E Q N A E L V K K L E K M V E D E A N V L P L F A K G F Q E C K
UniRef90_F8WEJ6          K D K S A E D A K A I Y D F
UniRef90_J0HGR0          P R P T L S Q E
UniRef90_J0HGR0          P R P T L S Q E
UniRef90_G8BPL5          E Y     P Y D L H Y T E K I K T L L T Q F L D D H Q D T L V T L S K G L Q E I N
UniRef90_R4XDN3          H K H K K S D Q L Q T A D W E D L L K T I D K R H Q P V A T T L A E G F H R   H
UniRef90_F2UK82          R K K V L K P N F S S K Y T D F L R S L V E P H L Q V A R V V A R G L A E
UniRef90_U4LIZ7          A K P K L S R E
UniRef90_U4LIZ7          A K P K L S R E
UniRef90_S9WB08          A     T P K T T D D L I Q F D N L V R R V F L R H Y N V S T L L C E G M R E L S
UniRef90_R8BQ05          K     E I K N L D D N E R F C K T I S Q T L K A H L S V I P K L A M G I L E
UniRef90_G8Y027          I A K R P K N L E E N E K F I Q A F Q G F I D E H A D T I P A L S K G F S E V R
UniRef90_T1FYR9          P P V   D S D F K D E L A Y C G V L K T F L E E H K N D V S L L T K G L K D V R
UniRef90_C5DBM7          N Y     P Y G L H D Q G V M T K K L T E F L D D H Q D T L V T L S R G F Q E I
UniRef90_UPI0001CBB4B8   T D Q K P   V P V N T D R F T D S L Q K I R D R H A N V V E T M A Q G V I E M R
UniRef90_S8E1W0          P T P K L P R H I R D A L A A Q S S D A V L
UniRef90_K3WU04          P L     P R S L E T E Q K F M D I H R R L R S D H A       T M H A       E V S
UniRef90_UPI000440860D   P K F H L S P E
UniRef90_A0A024JDE5      T L W P S E I Y N F N K K M T E T L K I I K R R H D P L V T T V A Q G V V E W K
UniRef90_A0A024JDE5      T L W P S E I Y N F N K K M T E T L K I I K R R H D P L V T T V A Q G V V E W K
UniRef90_X8JNH9          P T P R
UniRef90_G4T7P2          P A P K I P Q E Y
UniRef90_K5X522          I T W P P E V R D Y N R N F T K T L E M I K K R H D P T V T T V A Q G V L E W K
UniRef90_K5X522          I T W P P E V R D Y N R N F T K T L E M I K K R H D P T V T T V A Q G V L E W K
UniRef90_V2XB76          I N W P P E I R D Y N T R F T K M L E A I K T R H D P T V T T V A Q G V L E W K
UniRef90_V2XB76          I N W P P E I R D Y N T R F T K M L E A I K T R H D P T V T T V A Q G V L E W K
UniRef90_D8QDZ5          I N W P P E V H E Y N K R F T Q T L H K I K S R H D P T V T T V A Q G V L E W K
UniRef90_D8QDZ5          I N W P P E V H E Y N K R F T Q T L H K I K S R H D P T V T T V A Q G V L E W K
UniRef90_G3AJ72          P K P K I D
UniRef90_G3AJ72          P K P K I D
UniRef90_D6RKY6          P       P V T N L E E N E K F Q E
UniRef90_C4QWE7          V V Y P K E V Y E Y N K L V A D T L K T I K K R H D A T V P T V A R G V Q E W K
UniRef90_C4QWE7          V V Y P K E V Y E Y N K L V A D T L K T I K K R H D A T V P T V A R G V Q E W K
UniRef90_M5GAE1          E K E V T L E E N D E F V R R L Q G L V E S H A N D I P I M A K G F Q E C K
UniRef90_R7SP18          K E W P P E V R E Y N R S F T K A L E S I K K R H D P T V T T V A Q G V L E W K
UniRef90_R7SP18          K E W P P E V R E Y N R S F T K A L E S I K K R H D P T V T T V A Q G V L E W K
UniRef90_UPI000440AD58   Y N W P P E V H E Y N R N F T K L L E S I K K R H D P T V T T V A Q G V L E W K
UniRef90_I4Y7Y3          P P P Q L S A E V R N Q L F A Q
UniRef90_I4Y7Y3          P P P Q L S A E V R N Q L F A Q
UniRef90_C5FN54          L L N S S R M N G R E P R M L E
UniRef90_C5FN54          L L N S S R M N G R E P R M L E
UniRef90_W6MNN4          P K P T I D
UniRef90_A9UU04          G K I V N E Q K E A E Y V E L L N G F I D D H M N V V A Q L A Q G V R D C K
UniRef90_G8JTT0          E     M P Y G L N D R E L M Q S K L R D L L N D H N D T L A T L A K G L Q E I
UniRef90_J3PXD5          P       P I R T V A D N A A L L Q A L V T M V D D A A D V I G M F A T G F K E S K
UniRef90_B8BTL2          P V     P T N Q E S E K E F T N A L K I I L D R H S   I P M I A R G L Q S L K
UniRef90_I1C9D5          C S P E I I E Y T D Q F V K T I E R V K R R H D P V V T T V A Q G I L E Y K
UniRef90_R1DE73          L H P K P V D A S S K R S F D S L L R S S Q P K L L E V P E H I G T A L A A R L
UniRef90_A0A058Z1K4      E V N D R F V E L I D K I K N R H N L V M T S I A E G I I E W K
UniRef90_UPI0004561005   P K P K
UniRef90_UPI0004561005   P K P K
UniRef90_UPI000455E09E   P Q V D P P T R E A L S A C S D N I
UniRef90_J5RR44          A Y     P Y E L H N P P K I Q A R F T E L L D D H E D A I V V L A K G L Q E I R
UniRef90_G4YN76          P L     P A N L A G E R E F I E L H Q K I R K E H A S M H G N I A E A V Q A L
UniRef90_M3IGK8          H K P T I E N L A K L L Y K D S T P H H H Q Q Q H T
UniRef90_M3IGK8          H K P T I E N L A K L L Y K D S T P H H H Q Q Q H T
UniRef90_B4DEF3
UniRef90_R9AI54          P Q P N I P P D V R A Q L F A P T         N R R A D R L P E A S P N L A Q L E
UniRef90_C4QWQ0          Q D F T I K D T A H N V Q F N K T L T Q I T D L H A D N L E I L S K G F E E I I A
UniRef90_I2CP20          P   C P V T D G C E E S F V K V L T R V R D R H A D E L L L V A R G V F E L R
UniRef90_M5G1K9          V T W P P S V I D Y N R R F T K T L E V I K R R H D P T A T T V A A G V L E W K
UniRef90_M5G1K9          V T W P P S V I D Y N R R F T K T L E V I K R R H D P T A T T V A A G V L E W K
```

```
                              130           140           150           160
UniRef90_C0SBR7      R K R Q R M Q  I D S N I Q S F L D R F Y M S R I G I R M L I G Q H V A L T D Q
UniRef90_B8NGD9      R K R Q R L Q I D S T  V Q S F L D R F Y M S R I G I R M L I G Q H I A L T E Q
UniRef90_G8ZZN8              M D F F P K E S V F E F L N Q H L R D R I S M K L L A T H Y L S L L E Q
UniRef90_M7WS79      R E R K S   P H I D R S I Q T F L D R F Y M S R I G I R V L I G Q H I A L N R
UniRef90_S8AVQ7      R Q R Q R N  G I D E T I Q S F L D R F Y M S R I G I R M L I G Q H V A L N E Q
UniRef90_S8AVQ7      R Q R Q R N  G I D E T I Q S F L D R F Y M S R I G I R M L I G Q H V A L N E Q
UniRef90_T1KZV8      K H I K V T S N L D
UniRef90_D7G2U8      R G G K R E S E A L G R I Q D F L D D F Y Q N R V A M R F L C G H Y L A L S S T
UniRef90_N1Q303
UniRef90_N1Q303
UniRef90_F0XTU5
UniRef90_F0XTU5
UniRef90_U5HD51      R E N K   T P H I D R S I Q T F L D R F Y M S R I G I R V L I G Q H I A L N R
UniRef90_B2B7P6      G L      K D A A E L D K F M N T I L R S R I S R R V I A E Q H L A L T E T
UniRef90_C6HK64
UniRef90_C6HK64
UniRef90_UPI0003C4A112         D E K L V R Y F L D K T L T S R L G I R M L A T H H L A L H E D
UniRef90_B6QK25
UniRef90_B6QK25
UniRef90_G1XG26      R R R Q R T  G I D E S I Q A F L D R F Y M S R I G I R M L I G Q H V A L N E Q
UniRef90_S9PY22      R K T K Q    I D H S I Q V F L D R F Y M S R I G I R M L I G Q Y I A L
UniRef90_A7TPP0           I E F Y P K E K T F K F L N E H L R D R I S M K L L A T H Y L A L V D Q
UniRef90_G7DSW5      R A S N S A A D V D K D I Q T F L D R F Y M S R I G I R V L I G Q H I A L N R
UniRef90_G7DSW5      R A S N S A A D V D K D I Q T F L D R F Y M S R I G I R V L I G Q H I A L N R
UniRef90_G3J2S1      E A T P N P S I D E D
UniRef90_G3J2S1      E A T P N P S I D E D
UniRef90_F9WGV9      R R Q R W S E H S F E E M Q Q F F V E F C M G R V R L R F I A G N Y V Q L S
UniRef90_UPI0000D873B2   R K R Q R  L Q I D S N I Q S F L D R F Y M S R I G I R M L I G Q H I A L T Q Q
UniRef90_Q6CB64      Q V Y K   K S A A S L S I Q S F L D R F Y M S R I G I R M L I G Q H I A L
UniRef90_Q6CB64      Q V Y K   K S A A S L S I Q S F L D R F Y M S R I G I R M L I G Q H I A L
UniRef90_F4RUB7      R Y L S          E E Q I G S F L D K A I R A R L S I R L L A E Q H I A L S K G
UniRef90_F8WEJ6
UniRef90_J0HGR0
UniRef90_J0HGR0
UniRef90_G8BPL5      E        I Y S N A K I I A F L N D H L R D R I A M K L I A T H Y L T L I E Q
UniRef90_R4XDN3      L S G N P E L S H D D T L Q S F L E V F H L S R I G M R T T S Q H M T L L Q N
UniRef90_F2UK82         S V D A D L I D A Q H A S T F M R D L I R S R I T I R L L L E H H L A L V E K
UniRef90_U4LIZ7
UniRef90_U4LIZ7
UniRef90_S9WB08      Q R E Q W A R D A Y P D L Q V F F E K F C T E R V K L R L L I G N Y M Y L S N Q
UniRef90_R8BQ05           S S G L M P A E E L D Q F M N T I L R S
UniRef90_G8Y027      N L V S T      E R I K G F L D D H L K E R I H M R L I A H Q Q I A L M R S
UniRef90_T1FYR9      N F V K E K N V       L E D F L E K V L N S R I A T E L L C K H H I I L
UniRef90_C5DBM7              M D F F P K E A V F D F L N L H L R D R I A M K L L A T H Y L A L V S Q
UniRef90_UPI0001CBB4B8   D T H G I D P N K E G N L Q Y F L D R F F M S R I S I R M L I N Q H T L V F G N
UniRef90_S8E1W0
UniRef90_K3WU04      D A I K Q L N Y E P Q G L S E S L D N F Y N S R I G I R T L V D Q H L A
UniRef90_UPI000440860D
UniRef90_A0A024JDE5   Q H N K H Q L I I D Q K I Q S F L D R F Y M S R I G I R M L I G Q H I A L
UniRef90_A0A024JDE5   Q H N K H Q L I I D Q K I Q S F L D R F Y M S R I G I R M L I G Q H I A L
UniRef90_X8JNH9
UniRef90_K5X522      R S C N A K   N I N L D V Q T W L D R F Y L S R I G I R F L I G Q H V A L
UniRef90_K5X522      R S C N A K   N I N L D V Q T W L D R F Y L S R I G I R F L I G Q H V A L
UniRef90_V2XB76      R S Q R A    R H I G L D I Q Q W L D R F Y L S R I G I R F L I G Q H V A L N T Q
UniRef90_V2XB76      R S Q R A    R H I G L D I Q Q W L D R F Y L S R I G I R F L I G Q H V A L N T Q
UniRef90_D8QDZ5      R S Q N A R S I G L   D I Q A W L D R F Y M S R I G I R F L I G Q H I A L N S P
UniRef90_D8QDZ5      R S Q N A R S I G L   D I Q A W L D R F Y M S R I G I R F L I G Q H I A L N S P
UniRef90_G3AJ72
UniRef90_G3AJ72
UniRef90_D6RKY6         S A K Y M S F E D I N A F L D G A I R N R I S V R L I A E Q H I A V T R A
UniRef90_C4QWE7      H A K N Q M S  I E S N I Q S F L D R F Y L S R I G I R I L I G Q T I A L N Q D
UniRef90_C4QWE7      H A K N Q M S  I E S N I Q S F L D R F Y L S R I G I R I L I G Q T I A L N Q D
UniRef90_M5GAE1      R Y        M T P S A V S A F L D G A I R S R I G T R L I G E Q H V A I S R S
UniRef90_R7SP18      R S Q N A   R N I N L D V Q H W L D R F Y L S R I G I R F L I G Q H I A L
UniRef90_R7SP18      R S Q N A   R N I N L D V Q H W L D R F Y L S R I G I R F L I G Q H I A L
UniRef90_UPI000440AD58   R K Q N A K   D I G L D I Q A W L D R F Y M S R I G I R F L I G Q H V A L N N
UniRef90_I4Y7Y3
UniRef90_I4Y7Y3
UniRef90_C5FN54
UniRef90_C5FN54
UniRef90_W6MNN4
UniRef90_A9UU04      L H K K A E T D V     L D S F M N N I I N E R I G L R L L I E H Q V S L H
UniRef90_G8JTT0             M D F Y P K Q D V F D F L N A H L R D R L S M K L L S T H Y L S L I S Q
UniRef90_J3PXD5      R Y L S         E E Q I T S F L D R A I Q S R I S I R L I A E Q H L S L S K A
UniRef90_B8BTL2      D E R K V D A R R L A E M E E A L N R F F T A R V G L R F L T E H H V  L S G N
UniRef90_I1C9D5      E Y L N S   P L I D T E V Q Q F L D R F Y M S R I G I R M L I G Q H V A L Y R G
UniRef90_R1DE73      H A E G G E A D A D A D I D T H L D E F F L A R I G Q R F L I E H Y L A S S G S
UniRef90_A0A058Z1K4   R S H R Q   P I I N S A I Q S F L D Q F F M A R I G I R F L I G Q H I A L S R P
UniRef90_UPI0004561005
UniRef90_UPI0004561005
UniRef90_UPI000455E09E
UniRef90_J5RR44      S C Y       P K F K I S Q F L N F H L K E R I T M K L L V T H Y L S L M A Q
UniRef90_G4YN76           E Y E P Q G L S E S L D N F Y N S R I S N R L L V D Q H L A
UniRef90_M3IGK8
UniRef90_M3IGK8
UniRef90_B4DEF3
UniRef90_R9AI54      D E N T P G P
UniRef90_C4QWQ0      H L R      V L K D D R D F L D S H L K E R I L M R L I C N H H V A L S E Q
UniRef90_I2CP20      A K L G M D A L D G E A L H A Q L D E L H L K R I A L R I L V G H Y L A L H Q P
UniRef90_M5G1K9      K R K K W G G V V H E E I G K W L D R F Y L S R I G I R F L I G Q H I A L N T Q
UniRef90_M5G1K9      K R K K W G G V V H E E I G K W L D R F Y L S R I G I R F L I G Q H I A L N T Q
```

UniRef90_C0SBR7					
UniRef90_B8NGD9	T	H	V	R	H
UniRef90_G8ZZN8	S	K	Q		
UniRef90_M7WS79					
UniRef90_S8AVQ7					
UniRef90_S8AVQ7					
UniRef90_T1KZV8					
UniRef90_D7G2U8	Q	R	D	G	
UniRef90_N1Q303					
UniRef90_N1Q303					
UniRef90_F0XTU5					
UniRef90_F0XTU5					
UniRef90_U5HD51					
UniRef90_B2B7P6	F	H	A	P	
UniRef90_C6HK64					
UniRef90_C6HK64					
UniRef90_UPI0003C4A112	K	P	D		
UniRef90_B6QK25					
UniRef90_B6QK25					
UniRef90_G1XG26	P	R			
UniRef90_S9PY22					
UniRef90_A7TPP0	T	K			
UniRef90_G7DSW5					
UniRef90_G7DSW5					
UniRef90_G3J2S1					
UniRef90_G3J2S1					
UniRef90_F9WGV9					
UniRef90_UPI0000D873B2	T	H	E	Y	H
UniRef90_Q6CB64					
UniRef90_Q6CB64					
UniRef90_F4RUB7	S				
UniRef90_F8WEJ6					
UniRef90_J0HGR0					
UniRef90_J0HGR0					
UniRef90_G8BPL5	S				
UniRef90_R4XDN3	L	A	N	G	G
UniRef90_F2UK82	K	P	N	H	
UniRef90_U4LIZ7					
UniRef90_U4LIZ7					
UniRef90_S9WB08					
UniRef90_R8BQ05					
UniRef90_G8Y027	L	K	N	P	S
UniRef90_T1FYR9					
UniRef90_C5DBM7	K	S	N		
UniRef90_UPI0001CBB4B8	N				
UniRef90_S8E1W0					
UniRef90_K3WU04					
UniRef90_UPI000440860D					
UniRef90_A0A024JDE5					
UniRef90_A0A024JDE5					
UniRef90_X8JNH9					
UniRef90_G4T7P2					
UniRef90_K5X522					
UniRef90_K5X522					
UniRef90_V2XB76	Q	P			
UniRef90_V2XB76	Q	P			
UniRef90_D8QDZ5	E	R	H	K	D
UniRef90_D8QDZ5	E	R	H	K	D
UniRef90_G3AJ72					
UniRef90_G3AJ72					
UniRef90_D6RKY6	L	H	D	P	
UniRef90_C4QWE7	I	G	N	D	N
UniRef90_C4QWE7	I	G	N	D	N
UniRef90_M5GAE1					
UniRef90_R7SP18					
UniRef90_R7SP18					
UniRef90_UPI000440AD58					
UniRef90_I4Y7Y3					
UniRef90_I4Y7Y3					
UniRef90_C5FN54					
UniRef90_C5FN54					
UniRef90_W6MNN4					
UniRef90_A9UU04					
UniRef90_G8JTT0					
UniRef90_J3PXD5	E	H	S	P	N
UniRef90_B8BTL2	D	E	N	S	D
UniRef90_I1C9D5	P	S	T	K	N
UniRef90_R1DE73	S				
UniRef90_A0A058Z1K4	E				
UniRef90_UPI0004561005					
UniRef90_UPI0004561005					
UniRef90_UPI000455E09E					
UniRef90_J5RR44	N	N	D	G	S
UniRef90_G4YN76					
UniRef90_M3IGK8					
UniRef90_M3IGK8					
UniRef90_B4DEF3					
UniRef90_R9AI54					
UniRef90_C4QWQ0					
UniRef90_I2CP20	P	R	P		
UniRef90_M5G1K9	P	V	T	P	D
UniRef90_M5G1K9	P	V	T	P	D

```
                                  1         10        20        30        40
UniRef90_UPI00044133E2            K I H H F A S F P Q T G V S L Q Q M V L F G G Q N P S K A S Q F L Q E E L P
UniRef90_A8Q5Z3                   Q I N R F A A F P P T G V S L R Q M V I F G R N L L L A S S F L M E E L P
UniRef90_C5DVN1
UniRef90_C5DVN1
UniRef90_J9VKF9
UniRef90_J9VKF9
UniRef90_B7G6S3                   M Q Q L E S L A S Q R P T P L R L A D M Y E Y G R Q R L R N S Q F L H R E L P
UniRef90_A0A024J6C1
UniRef90_A0A024J6C1
UniRef90_G0W3N5                     L I Q D Y S R K P I P P L S Y G F L T N F K K K P L T S N E K Y N N Y L I
UniRef90_E9BGL3               T E L N Q F Y A K Q K V K D I F F E N L L Y I N T P L M Q H S E T V F R Q Y L
UniRef90_C4XYS9                   E K I Y Q Y A T Y P Q T S V S I R Q M V Q F G P S P S P A S R F I V E E L P
UniRef90_C4XYS9                   E K I Y Q Y A T Y P Q T S V S I R Q M V Q F G P S P S P A S R F I V E E L P
UniRef90_UPI0004417E81             R I H H F A S F P Q T G L S L Q Q M V L F G Q N P S Q A S Q F L G E E L P
UniRef90_W1QLB2                   R E I Y K L A R V P Q T G V S L R Q M V Q F G P Q P S H A S N F I V E E L P
UniRef90_R9XDV9                     L I Q D Y A K R E I P R I T Y E F L L E Y V P P L S D N E R F V L N M L L
UniRef90_G0V8U8                     L I Q D Y S R K P I P P L S Y K F L T E Y Q K P L S Q T E K Y T I N Q L I
UniRef90_M5ECI5
UniRef90_K7VZL1
UniRef90_K0RFK1              M D E L L A L A S C N P T A L S L E A M Y K Y A P K R L R N S Q F L H K E L P
UniRef90_F0WW98               E V Y R L H H I P L P P I T L Q A L L Q R G R P P L Q S A R Q L H R E V P
UniRef90_E8Z6U5                                                   H A E W L R E Q L P
UniRef90_Q6BU60               E Q I V K Y A G Y Q Q T S I S L R Q M V Q F G P T P S P A S Q F I V E E L P
UniRef90_J9VW37
UniRef90_J9VW37
UniRef90_W0T6D9             I Q H L I K D Y S S Y D V P K I D W A F L M Q H K P P L K D N E Q Y T L N I L L
UniRef90_I1BN76                                           N A E R L I T S A N W V R K E L L
UniRef90_A9USM8                  I A N T A R L S Y P P V S V S D L L N F S S N V L Q T G I L L Y K I L P
UniRef90_W0TE38
UniRef90_W0TE38
UniRef90_W1QEH8                   R F I Q K Q A A R P V P T V A L N D L L K F N S A A S H N A N E T L N D M V
UniRef90_K4E9L5                     Q F Y A L Q K E K R L P L R N M M R N V E D L Y V H A K I I H R E Y L
UniRef90_J7S6S2                   L I L D Y A R K P I Q P L R Y G F L L K Y A S P L T P N E R Y V F N L L L
UniRef90_H3E330            V A K K L D H Y S Q F Q P S S L S I Q Q Y L D F G R N A A S S F E F L R K E L L
UniRef90_H2B023           I G L L I Q D F S K K P V P S V S Y D F L T T Y K K H L N S N E Q Y T L N Y L L
UniRef90_Q9P6P9           L Q E K V N L L A Q Y P Q T G L S L K Q L V Y F G K N P T R A G L F L R D E L P
UniRef90_UPI000185F01D                                           W I R E E L P
UniRef90_F2TWS3                   R R F K E H A A R P M H R V S L E H L V K F A R M L L Q S A N F L R T A L P
UniRef90_J3PN56
UniRef90_T1IX65                                         K R S A Q Y L Q K E L P
UniRef90_Q756J1                  Q D L Q E F A S V D T R E G R L Y Q M L Y A G R K P     E V I E R E P L
UniRef90_Q756J1                  Q D L Q E F A S V D T R E G R L Y Q M L Y A G R K P     E V I E R E P L
UniRef90_G0UB15                    Q F Y A H Q I V Q S I P L R N L A H I G D D L F G Y A R T A H R E C L
UniRef90_R9XG93
UniRef90_R9XG93
UniRef90_G8JPW8                   Q R I W H F S E L P Q T P V S L R Q M C Q F G P Q P F K A S C F L V G E L Q
UniRef90_G8JPW8                   Q R I W H F S E L P Q T P V S L R Q M C Q F G P Q P F K A S C F L V G E L Q
UniRef90_K0KLR6                   K L I T D Y S Q K K I P K L T L D S L I N I S K K I S T N A I A T I N Y L T
UniRef90_I2GXZ6           L T Q L I Q D Y S H K S I P N I D Y A Y L T N W N S S P H S N E Q Y T I Y S L L
UniRef90_I2JXU2
UniRef90_I2JXU2
UniRef90_B7G1D5
UniRef90_B6JXT8                   E K I N I L A H Y P Q T G L S L K Q L V Y F G K N P T R A G L F L R D E L P
UniRef90_F0VPM2                                                 F L S V E L P
UniRef90_W6MHU0                   I Y E S S N K P L P E I S L N D L L K F N T A T L Q N A N E T V M D M L
UniRef90_X6MDY8                 R R V Q S D A L K T P I A L T Y K D L E A F S D K L I Q S A E F L R Q Q V P
UniRef90_E4XHH9                     E K Y S N F V P R P L S A D D L I L F A D S V E K S F E F L K Q E L P
UniRef90_C5K780          V L E L I A Q E A Q V P L P R Y T L E S L L H L S K H E R T A   H L L H N L K
UniRef90_T5A8I7                 E I A A L A S Q H Q H S L S L A D L V R H G R P P L S S A N F A L S L L P
UniRef90_B3RJW8                   L D Q L M A T P I T P I T P Y Q V L F D G S H L M K S A K F L V K E L L
UniRef90_T1JAD9
UniRef90_K0T4H3           V M K L V Q R Q A S K P Q T S A S L E T L M K T G R V L T Q V A S F L R R E L P
UniRef90_F4RD89                                    L E H Q K R L V R G A N F I R I Q L P
UniRef90_S9V5Q7                 Q F Y A A Q K N K T L E L E N L L Y I S K P L L A H A K T V H R E Y L
UniRef90_Q0UQV2
UniRef90_E9AUG9                   L V D L Y A S R K M K R L D I K R L A I F N D R A Y H A P I F C H K A L P
UniRef90_K4DTY1                   L L A F Y S S R P M Q K L S L N E V I Y Y C K T G Y N A E I F C H M E L P
UniRef90_G7YGR5
UniRef90_S9VK56                   F A S R H M K E M N M K M L H V F A D K S Y S S F I F C H K H L P
UniRef90_G0TR18                  L D F Y S S R P L S S T S K D F I A F C A K S E R N A K I F C H V E L P
UniRef90_X6NKP2
UniRef90_U6KMJ1          V I Q E I E K S S S K P I R P M T L K R L L Q S A E D R V K T A E W V R S E L P
UniRef90_R1BYB1                             P P Q P V S I S Q M M A S G R T R L A N A Q F L R R E L A
UniRef90_S9V602                 L V K L Y S S R Q L K D L S M R K A I F F S S S T F H A P I Y C H E H L P
UniRef90_J0LE17                  K L L E R Y S D K P T G R L S L R Q L V F F G R A     M N E E R L
UniRef90_X6MG60                  R R I E N D A L K K P I A L T F K D M Y E Q Q K L L M K S A Q F L R D Q V P
UniRef90_D8LV14                                           R L S L A R F I S S E L P
UniRef90_H2NVM3          A P K Y I E H F S K F S P S P L S M K Q F L D F G T T E K G C L E G Y R Q E R V
UniRef90_C9ZHT4          I K S L L A F Y S S R P L S N I T P S K F I S Y C A E S D H N A K F C H A E L P
UniRef90_G0UIT4                  L L A F Y S S R P L S N V T P S K F I S Y C A E S D H N A K F C H A E L P
UniRef90_U6HCL0
UniRef90_C4R8U4
UniRef90_C4R8U4
UniRef90_B7G0M6                           S L R S L A D H G I E G V T A S N L I L S E A T
UniRef90_K8YT64          A R R Q A K P S R P S Q L I V T A Q C P L Q G V Q Q L H R E L R
UniRef90_I2JUU4                           P V P T V T L N D L L R F Q D K L N D N A N E T L K D I F
```

lupas_21
lupas_14
lupas_28

```
                              50              60              70          80
UniRef90_UPI00044133E2  Y R Y A Q S F E E L V Q L P D D I R R N P S L E P N H N M N R R Y Y A N P K I D
UniRef90_A8Q5Z3         V R F A H R V K D L Q E L P G N L S D M P S I I K V K N W Y A Q S F D E L V S F
UniRef90_C5DVN1                                                                         V T S L
UniRef90_C5DVN1                                                                         V T S L
UniRef90_J9VKF9                                                         R R Y Y S P P P A T
UniRef90_J9VKF9                                                         R R Y Y S P P P A T
UniRef90_B7G6S3        I R V A Q R A Y D L L T L P H G L S N A T P I R Q V A A T Y I Q Y L Q Q F K S R
UniRef90_A0A024J6C1
UniRef90_G0W3N5        S Y T C R Q L N S I Q N L P Y I V I T N P K I N Q I N S L Y L R T L E A L L S K
UniRef90_E9BGL3        V R I A R R V R H L N H A P Y G L S Q M P G L Q M L K K W Y Q W S F H D V R S T
UniRef90_C4XYS9        I R L A L K V K D L E N S P M G L S E M P S T I K V K N W Y A Q S F E E L T S L
UniRef90_C4XYS9        I R L A L K V K D L E N S P M G L S E M P S T I K V K N W Y A Q S F E E L T S L
UniRef90_UPI0004417E81 I R L A H R V K E L D T L P H N L S K M P S I E K V K N W Y A H S F E E L I R F
UniRef90_W1QLB2        I R L S H R V K E L E E L P S G L N N D P S I Q R V R D W Y A Q S F E E L T S L
UniRef90_R9XDV9        T Y T C R R L L A L Q R L P Y I A V V N P N I E E S N R L Y L K T L E S L L A I
UniRef90_G0V8U8        S L T C R Q L S L I Q N L P Y I V L L N P K I N Q I N S L Y L K T L E S L L S I
UniRef90_M5ECI5                                                                  F S T R L D D
UniRef90_K7VZL1                                                        I S R L Y A R Y F G G D L Q I
UniRef90_K0RFK1        I R I A Q R A I D L L T L P H G L N S T R D V Q A V A N T Y I R Y L K V V L D F
UniRef90_F0WW98        I R L A R R I V E L E N L P S E L L A M P N V G K I R G H M L T S F E     K M I
UniRef90_E8Z6U5        V R L A H R L S D F M Q L P Y V V L L N A R F H E V F R L N F Q A F D T L A S A
UniRef90_Q6BU60        I R L A I K V K N L E N S P H G L N R M P S T M K V R D W Y A Q S F Q E L T E L
UniRef90_J9VW37                                                        R R Y F S P P P P T
UniRef90_J9VW37                                                        R R Y F S P P P P T
UniRef90_W0T6D9        T L T C H R L A A L Q E L P Y I A L V N P N I E Q S N R L Y L K T L E S L L S I
UniRef90_I1BN76        I R L A H R I R D F Q Q L P F I V G A N P H I E
UniRef90_A9USM8        V R L A T R I I D I H D L P Y I C G I N P F M Q F I H N D Y V N V F M Q M K A I
UniRef90_W0TE38                               L P Q K Y F S P L P A S T V K E W S K S     Q D F Y Q F
UniRef90_W0TE38                               L P Q K Y F S P L P A S T V K E W S K S     Q D F Y Q F
UniRef90_W1QEH8        V L V T R R L I Q F M K L P Y I V V L N A K I A D I Y N A Y L D T L K V I L E F
UniRef90_K4E9L5        V R L A Q R A R A L T L A P M G L S Q M P S I Q E L R R S Y E W S F H G V N S
UniRef90_J7S6S2        A Y T C R Q L N A I Q R L P Y I A L L N P K I E E S H S L Y L N T L R S L L S N
UniRef90_H3E330        V R L A N I M Q E I S L L P P K L L A T P S S K M V S G W Y C E S F E D L I K F
UniRef90_H2B023        S F T C R Q L N S I Q R L P Y I V I L N P K V E E S Y S L Y M K T L K S L L S V
UniRef90_Q9P6P9        I R L A R R I I E L K E L P K C L L A N T H L D S S K G R Y F E S D Q D N G V D
UniRef90_UPI000185F01D V R L S H R L Y D F H R L P F V A V T N P L V H S V Y E T Y L K T F D R M R R L
UniRef90_F2TWS3        V R L A R R L L D I H S L P Y I C G I N P H I Q K I H E I Y V D I F N E F V D M
UniRef90_J3PN56                                                        I R Y Y V D L G D V
UniRef90_T1IX65        V R I A H R I V G F R N L P F I V G C N P T I L A V H E N Y I R S F H I L S E L
UniRef90_Q756J1        A R I L E L L Y E L Q E A P Y R A A A C G L V R P P A Q Y Y S Q L P E D L V M Y
UniRef90_Q756J1        A R I L E L L Y E L Q E A P Y R A A A C G L V R P P A Q Y Y S Q L P E D L V M Y
UniRef90_G0UB15        V R I A Q I V R A L Y H A S L G L S Q M P S V Q Q L C R C Y E W S F H D V K T T
UniRef90_R9XG93                                           I L T I E D A D R E A F Y K L
UniRef90_R9XG93                                           I L T I E D A D R E A F Y K L
UniRef90_G8JPW8        V R L A R R I K E L G A F P Y G L N K M E D I I Q I R D W Y V Q S F K D L H D F
UniRef90_G8JPW8        V R L A R R I K E L G A F P Y G L N K M E D I I Q I R D W Y V Q S F K D L H D F
UniRef90_K0KLR6        I F N T K R L Q A F R E L P Y L V V L N P H I S E T Y E L Y L K S L R I L L E L
UniRef90_I2GXZ6        V Y V C R R L N S I H V L P Y I V V I N P Y I S N N N S V Y L K     S L E S L L
UniRef90_I2JXU2                          I E N L N S T H M H V G L L R P R R S Y Y I S T P K D I V
UniRef90_I2JXU2                          I E N L N S T H M H V G L L R P R R S Y Y I S T P K D I V
UniRef90_B7G1D5                                    M P S V Q T V K E I Y I D S F L E M L D Y
UniRef90_B6JXT8        I R F A H R I I E L Q N I P L P L S S N V E D T D I H N P S L R Y F F T D F S Y
UniRef90_F0VPM2        V R F A T R I K Q I E A             V R Q L Y V E S F K Q L R M C
UniRef90_W6MHU0        T L I A T R L K V F R Q L P Y I V V L N P N I A E I Y D A Y L E T L K V L L E F
UniRef90_X6MDY8        I R L A H V L V A L Q N L P Y G A N S A P S I K K V Y D L Y L E S Y E S C S N F
UniRef90_E4XHH9        T R W M Q I F A E I N A L P I E K P S   P L M L E V K S M I Q E T L E N L L P F
UniRef90_C5K780        R G V A I C G Y E L Q C Y P F G F G C Q P S V K H V V D N Y L Q D F Y D I S K L
UniRef90_T5A8I7        I R L A R R I Q S L R N L P Y I V V S N P N I S R I Y N N Y L H S L S I L L P Y
UniRef90_B3RJW8        V R F S H L I A T M Q N L P Y I A M C H P Q L K S V V N D Y K A A V
UniRef90_T1JAD9                                           H E N Y I R S F H I L S E L
UniRef90_K0T4H3        I R L A R R I E D L S R V P L   L Q D M R S V Q Q V R E L Y T T S F L E I L S M
UniRef90_F4RD89        T R I A R R I R D F Q S L L D I M A S N P H L T D A F D K I R L Y L
UniRef90_S9V5Q7        V R I A K R A R A L N F A P Y G L S Q M P S I L E L K K Y Y Q W S F H D M R S N
UniRef90_Q0UQV2                                                        L S T L L P W
UniRef90_E9AUG9        I I L A H F I T G L D R L P S G L N A M P S I L A V R A T L L H S F Q K L I N C
UniRef90_K4DTY1        V L L A R L I M A I D T L P C G L N A M P S V L L V R N T Y L D S F K K L I K C
UniRef90_G7YGR5                                                 M Y L K S F R R L T E E
UniRef90_S9VK56        V V L A H F I M Q L D N L P A G L S A M P S V I K V R G I I L N S F L K I V S C
UniRef90_G0TR18        I L L A R L I A I A D S F P C G L G S M C S T L L V R N I Y L E S F K K L I K C
UniRef90_X6NKP2                                      N S I L K L R N M Y Q H S F Y L I R S L
UniRef90_U6KMJ1        V R L A H R L F D F H R L P F C C F C C P Q F K R V Y E L Y L N T F Q T L K Q Q
UniRef90_R1BYB1        S R R A H V L S L L R T M P P P L A S Q P A V A R L C V L N W Q R L K G L L T L
UniRef90_S9V602        V V L S H A I N A L D A L P V G L N S M P S T L K V R N A L L D S F L K L V D C
UniRef90_J0LE17        I K A     R I R Q F
UniRef90_X6MG60        I R L A H V I L A L Q N L P Y G V N Q A P S L Q Q I Y D L Y L Q S Y E V C I N L
UniRef90_D8LV14        L R F A A T T S V L S S L P C Q L S E M P A T N D L I S L Y N R C Q A E I Q N M
UniRef90_H2NVM3        N G E A G T G R G L S M     G L S R T R A P S E V A E A Y V Q S L L D I M E F
UniRef90_C9ZHT4        T L L A R L I T T I D S F P C G L N A M L P I V S V R N T F L D S F K K I I K C
UniRef90_G0UIT4        T L L A K L I T T I D S F P C G L N A M A P I V S V R N T Y L D S F K K I I K C
UniRef90_U6HCL0                                                        M S L I I D F
UniRef90_C4R8U4                                                        L Q V A
UniRef90_C4R8U4                                                        L Q V A
UniRef90_B7G0M6        K R L A H I V K E I K S R Q D N I L N S E S L R Y V H A D T Y K L G S E I V G N
UniRef90_K8YT64        T R I G H Q I L R L Q H L P A S K G V D N L L A L H I D V Y E R A L D D A I A C
UniRef90_I2JUU4        I L V G R A I Q R F L D L P Y I T I M N P H M A K I Y Q C Y T D T L N M L L V F
```

lupas_21
lupas_14
lupas_28

```
                                      90          100         110         120
UniRef90_UPI00044133E2  V E W P P E V R E Y N T S F T R L L E K I K R R H D P T V T T V A Q G V N E W K
UniRef90_A8Q5Z3         P Q P H L P D S L Q R K L L K S T V S D T L E
UniRef90_C5DVN1         E V W P K E I L K F N A A L F K V L H N I K V R H N A T V V T L A K G V L K W K
UniRef90_C5DVN1         E V W P K E I L K F N A A L F K V L H N I K V R H N A T V V T L A K G V L K W K
UniRef90_J9VKF9         I V Y P P E V H E Y N E R F T H L L E N I K K R H D P T V T T V A Q G V L E W K
UniRef90_J9VKF9         I V Y P P E V H E Y N E R F T H L L E N I K K R H D P T V T T V A Q G V L E W K
UniRef90_B7G6S3         P     C P Q N K P Q E E E F T D F V Q S L V L D R A A V P I S I
UniRef90_A0A024J6C1     Q R W P R E V Y D Y L T L F S E C L T S V R K R H D A V V T T M A Q G I R D Y G
UniRef90_A0A024J6C1     Q R W P R E V Y D Y L T L F S E C L T S V R K R H D A V V T T M A Q G I R D Y G
UniRef90_G0W3N5         Q F     P Y D L Y N D D L I I D L L K K L N N E H N D N L I L L S N G L K E I H
UniRef90_E9BGL3         P V P T T R D E     C Y R C D R M V R R V F L R H Y N V S S L I T D G M V E F A
UniRef90_C4XYS9         P K P H V D
UniRef90_C4XYS9         P K P H V D
UniRef90_UPI0004417E81  P P P R
UniRef90_W1QLB2         P K P S I S D E M R A V L Y P S S P E K I
UniRef90_R9XDV9         E L     P Y G L H D H A A M R D K L L T F L D D H C D T L L T L S K G F E E I
UniRef90_G0V8U8         T F     P Y D L Y K N D L I L S L L N H L N E E H N D T L L V L S D G L K E I N
UniRef90_M5ECI5         I D W P Q E L M E Y N E N F T R C L E R I K R H D A V V T T L A Q G V L E Y K
UniRef90_K7VZL1         I S M E V R S R N D E L A F T Q M I N M V K V R H N N V V P T M A L G V Q Q L K
UniRef90_K0RFK1         P     M P M N A E S E R E F T Q I L K T I D G R R A     P I D G Q R L R E M E
UniRef90_F0WW98         Q S R E I R T L E D E Q R F M D M H T R I R R E H R T V H A D L A V A V
UniRef90_E8Z6U5         A     P V H D A A S S A E F A E V L H R L V R S T D D M V R T M Q E G Y G E L Q
UniRef90_Q6BU60         P K P Q I S S E M L N S H Q A E T E S H Q V N E A T T M S P I L Q E D M K S V E
UniRef90_J9VW37         I I Y P P E V H D Y N E K F T Q L L Q V I K H R H D P T V T T V A Q G V L E W K
UniRef90_J9VW37         I I Y P P E V H D Y N E K F T Q L L Q V I K H R H D P T V T T V A Q G V L E W K
UniRef90_W0T6D9         E Y     P Y D L Y D T A K M Q N L T K E F L N D H Q D T L L T L S N G L Q E I S
UniRef90_I1BN76                     Y D L L E D G L L A L P K L A Q G L C E S A
UniRef90_A9USM8         K H     I K T Q A D L S K F N T L M I E G L K Q G N S A L P Q L A R A S K E L A
UniRef90_W0TE38                 W P A D L L L F N R S F Y N V L Q R I K E R H D A T V I T L A K G V L K W K
UniRef90_W0TE38                 W P A D L L L F N R S F Y N V L Q R I K E R H D A T V I T L A K G V L K W K
UniRef90_W1QEH8         V T F K I Q N L D Q N D L F L Q M L K K T I D M H T D N L S T L S E G F E E I S
UniRef90_K4E9L5         T K P P I D L Q S A Q E F D S L M R C V F L R H Y N V S S L L S E G M Y E L G
UniRef90_J7S6S2         S F     P Y D I Y N A N K M L T L M Q D F L E N H Q D T L V T L S A G L Q E I S
UniRef90_H3E330         E E T K S T Q D K I D N Y L I S V I H
UniRef90_H2B023         R Y     P Y D L Y Q K D K M I A L F T E F L N D H N D T L L T L S N G L R E I
UniRef90_Q9P6P9         C N W P E S L L K F N S N F A Y L L N T I R T R H D N V A V E I A L D I Q E Y R
UniRef90_UPI000185F01D  P     P L K T V A D M N A F V Q L V E E R S T H D R T V D L M G Q G V R Q L R
UniRef90_F2TWS3         P Q     I R D L D E E K V F V S A L R R Q L E V S R Q I L P S L A R A S N E L A
UniRef90_J3PN56             V W P P E V H D Y N E K F T Q T L S V I K R R H D P V V T T V A Q G I L E Y K
UniRef90_T1IX65             S M I T N F E M E Q K F S Q L L R E L L E S H K H V V T Q L A E G F K D S R
UniRef90_Q756J1         K I W P Q E I L L F N D S Y Y K M L K R I K V R H D A T V V T L A R G L L R W K
UniRef90_Q756J1         K I W P Q E I L L F N D S Y Y K M L K R I K V R H D A T V V T L A R G L L R W K
UniRef90_G0UB15         K V     P T N P D D A I K F D T L F R R L F L R H Y N V S V L L S E G M Q E L G
UniRef90_R9XG93                 W P Q E I L L F N D S Y Y K M L K R I K V R H D A T V V T L A R G L L R W K
UniRef90_R9XG93                 W P Q E I L L F N D S Y Y K M L K R I K V R H D A T V V T L A R G L L R W K
UniRef90_G8JPW8         S H D L K T R N G R L Y Q M L
UniRef90_G8JPW8         S H D L K T R N G R L Y Q M L
UniRef90_K0KLR6         D P Y     H N D F N K I H N S L L E Y S E I H K N A I P S L S K G F T E V S
UniRef90_I2GXZ6         S L E Y P Y Q L Q D D N A V R R V L N E F L D D H Q D S I M E L A T G F K E V G
UniRef90_I2JXU2             Y P P E V Q N Y N K D V T K T L T K I K R R H D A T V T T I A R G V Q S W K
UniRef90_I2JXU2             Y P P E V Q N Y N K D V T K T L T K I K R R H D A T V T T I A R G V Q S W K
UniRef90_B7G1D5         P Q I H T P D D Q     A D F A D G L E S L Y A K H A N V L V Q M A K G A F Q L R
UniRef90_B6JXT8         E D C P K S V H L F N H F A K L L D I Q Q R H N R V A L E I A L D V L E Y H
UniRef90_F0VPM2         T W T N K     A E F A K L L K N L K R R H A P I A P L L V T G M R N L K
UniRef90_W6MHU0         V A S V Q G D D E Q N E R L I G V L Q K S I D I H T D N L T V L S K G F E E I A
UniRef90_X6MDY8         P     E I N T P E L E K G F A D L I L T R L K E H L V V V P H I C M G L L E T A
UniRef90_E4XHH9         K D Q     P A T E N V I S K F N S K L E D Y I H R H R T A F D E V A L L A I L E F K
UniRef90_C5K780         Q A E M G D N I V W S P E V K T V M D G I F T R H K G T M I D I A R G V L E F Q
UniRef90_T5A8I7         W H
UniRef90_B3RJW8                         A Y S K T L T K I L E K Y N D E L K S L A S G F
UniRef90_T1JAD9             S M I T N F E M E Q K F S Q L L R E L L E S H K H V V T Q L A E G F K D S R
UniRef90_K0T4H3         D K H P P S R E E W E E R F A Q V L E N V Y E R H S S V L V Q M A K G A F E L R
UniRef90_F4RD89             P I T D Q Q D N Q R W C E F L E D L L N Q H W I G I P Q L A I G I A E S S
UniRef90_S9V5Q7         P     P P K T T E D L M A F D S L V R K V F L R H Y N V S D L L C A G M K E L S
UniRef90_Q0UQV2         A E H E I K T L E E E V K F T E V M A D L V Q T H A N T I S I L A R G F P R K H
UniRef90_E9AUG9         K I     P A T D D Q V Q H F C R V L E D I D E E H A N L L Q T M A F G I L E L K
UniRef90_K4DTY1         D F     P D N D E R I L H F R R V V A D I E E A H S D V L G T M A M G L L E L K
UniRef90_G7YGR5         P     P V E T F D D E M R F S N L L R T I L N E H S S V I S M L A A G F R E C R
UniRef90_S9VK56         K I     P T S P E A E K E F I H V L E D I D E A H A E A V K T L S V G I L E L K
UniRef90_G0TR18         E F     P E S S E K Q Q F V K V K E N E K A H R D I L R T M G T G V M E L K
UniRef90_X6NKP2         P     N P T D E S T L A S F V Q G V D S H F K S L A N A T E L L S S G I K E C H
UniRef90_U6KMJ1         K P I T N H E Q
UniRef90_R1BYB1         P E L S T A D D E F A A A M L D H S A A I D R R W P H L S P E D A L G T L Q R E
UniRef90_S9V602         A I     P T T K E N I K K F E D L E I E E N H A Q V V Q S I A V G V L E L K
UniRef90_J0LE17         T F S Q I A T P E E N D A F C R F L H D L L N E H L P V I L N L     F F D Q R
UniRef90_X6MG60         P E I     M S S P E Q E K E F T E F I L T R L K E H L L V
UniRef90_D8LV14         E I P K T I M E D T E     F T A R L A R V Q R D L Q H V Y P L M A C G V C Q F K
UniRef90_H2NVM3         L D K D P E D H R T L S Q W G P W V G Q E G R R W P G A S G V A A P G A     E V Q
UniRef90_C9ZHT4         D F     P E D G A K S E Q F L I E E A H R E V L L T I G T G L L Q L K
UniRef90_G0UIT4         E F     P Q D G V K S G E F L D V V K E L E E N H R D V L L A M G T G L L Q L K
UniRef90_U6HCL0         E D K T L N A K E C E N     F L V F L D K A L S R H S T V     G V M E M H
UniRef90_C4R8U4         Y R S H T E I H S Y L E E V A T L F Q L I L K N H S N D I L S F T K L L M E H K
UniRef90_C4R8U4         Y R S H T E I H S Y L E E V A T L F Q L I L K N H S N D I L S F T K L L M E H K
UniRef90_B7G0M6         Q N I W N R F S K S D K H L L H T A E Q L R S R H A R S I E T M V Q I V S D I R
UniRef90_K8YT64         L G S K D M K P V V I E S F N H L M S E I E G R M A M V V E T L M D G L K E S R
UniRef90_I2JUU4         A N F H I T S K K H E E E L I G V L S K I L E I H T D N T V D L R E A F N E I Q
```

lupas_21
lupas_14
lupas_28

```
                                    130           140           150           160
UniRef90_UPI00044133E2  R S H N   T R H I G I E L Q N W L D R F Y M S R I G I R F L I G Q H V A L
UniRef90_A8Q5Z3
UniRef90_C5DVN1         K T C Q Q N   M F D D S V Q S F L D R F Y M S R I G I R M L I A Q H L D L L E P
UniRef90_C5DVN1         K T C Q Q N   M F D D S V Q S F L D R F Y M S R I G I R M L I A Q H L D L L E P
UniRef90_J9VKF9         R K R K A G R I G A P   I Q E W L D R F H M S R I G I R F L I G Q H V A L
UniRef90_J9VKF9         R K R K A G R I G A P   I Q E W L D R F H M S R I G I R F L I G Q H V A L
UniRef90_B7G6S3            F R E Q P D R L Q E M E D A L Y R F F T A R V G L R F L T V H H V L
UniRef90_A0A024J6C1     T T L Q G T N K D E Q D I Q S F L D R F F M S R I G I R M L I G Q Q L A L M E G
UniRef90_A0A024J6C1     T T L Q G T N K D E Q D I Q S F L D R F F M S R I G I R M L I G Q Q L A L M E G
UniRef90_G0W3N5         Q           D L L S R K K I F K F L D D H I K D R M S M K L I I S N Y L S L
UniRef90_E9BGL3         S R E G W T H V D E E E L Q N F F E A F C L G R V R L R F L V G N Y M Y L S
UniRef90_C4XYS9
UniRef90_C4XYS9
UniRef90_UPI0004417E81
UniRef90_W1QLB2
UniRef90_R9XDV9                 M D F Y P Q Q K V F D F L N V H L R D R L S M K L L V T H Y L R L I E Q
UniRef90_G0V8U8         N E L       L S N E A I S K F L D V H I R D R I T M K L I I L N H L A L L S P
UniRef90_M5ECI5         R S K A N D S Q   Q A N L Q V F L D R F Y M S R I G I R M L I G Q H V A L G R S
UniRef90_K7VZL1         K E L G R S P F E F D E I H E F L D R F Y M S R I S I H M L I G Q H V A L H D P
UniRef90_K0RFK1         E A                 L N R F F T A R V G L R F L V E H H I   L S G N
UniRef90_F0WW98         Q S M E K D P C P S     A I L D E F Y D S R I G I R M L L D Q H V A
UniRef90_E8Z6U5         M L L G         D L V E L D S F I D R V F V T R I G N R L L A E H Y V A V D E A
UniRef90_Q6BU60         E T H N P A N S E S K N V
UniRef90_J9VW37         R T Q K   T S V I G T P I Q E F L D R F Y M S R I G I R F L I G Q H I A L
UniRef90_J9VW37         R T Q K   T S V I G T P I Q E F L D R F Y M S R I G I R F L I G Q H I A L
UniRef90_W0T6D9             N F Y D H E K I F K F L N N H L H D R I L M K L L T T N Y L E L L K Q
UniRef90_I1BN76         K F Y S A E Q     D N L D L F L N R T L R S R I S R R I L A E Q H L T L T K A
UniRef90_A9USM8         P H L A P E V       L N R F I N R F I T C R I G R R L L A E Q H L A I I Q Q
UniRef90_W0TE38         K T H Q Q N V   V D D S I Q S F L D R F Y L S R I G I R M L I G Q H L A L L E S
UniRef90_W0TE38         K T H Q Q N V   V D D S I Q S F L D R F Y L S R I G I R M L I G Q H L A L L E S
UniRef90_W1QEH8         G L N L V D D K T       F L N D H L K E R I L M R L L A N H H I Q L T E Q
UniRef90_K4E9L5         Q S D K S L V E T F E E L Q V F F D E F C T G R V R L R F L V G N Y M Y L S
UniRef90_J7S6S2         E Y Y G         H R L V Y D F L N D H L R H R I A M K L L A T H Y I A L V D N
UniRef90_H3E330
UniRef90_H2B023               T D Y Y P R E S V F Q F L N D H L Q N R I T M K L L V T H Y L N L H D T
UniRef90_Q9P6P9         R K         T N Q I D N S I Q I F L D R F Y M S R I G I R M L L G Q Y I A L V S E
UniRef90_UPI000185F01D  R           I C R D V D L N S F L E R F F Y F R I G R R V M I D Q L V H L
UniRef90_F2TWS3         S H         M D H G D L T K F L N T M I
UniRef90_J3PN56         D F L Q N P S V I D R S V Q T F L D R F Y M S R I G I R V L I G Q H I A L
UniRef90_T1IX65         R H L K P N H
UniRef90_Q756J1         R T Q K     N N V V D A S I K G Y L D R F Y M G R I G I R M L I G Q H L S L L E Q
UniRef90_Q756J1         R T Q K     N N V V D A S I K G Y L D R F Y M G R I G I R M L I G Q H L S L L E Q
UniRef90_G0UB15         Q R E K W N S E T F D E L Q L F F D N F C M S R V R L R F L V G N Y I Q L S T Q
UniRef90_R9XG93         R T Q K     N N V V D A S I K G Y L D R F Y M G R I G I R M L I G Q H L S L L E Q
UniRef90_R9XG93         R T Q K     N N V V D A S I K G Y L D R F Y M G R I G I R M L I G Q H L S L L E Q
UniRef90_G8JPW8
UniRef90_G8JPW8
UniRef90_K0KLR6         T F F         P K E S I V Q F L N K H F Y D K I N M E T I T N N Y I N L
UniRef90_I2GXZ6         E F Y         D R K S I K E F L D A H L K D R I I M K L L A T H Y L K L I E S
UniRef90_I2JXU2         R K     K N F T Y V D N S V N Q F L D R F Y L S R I G I R M L I G Q T I A L N Q Q
UniRef90_I2JXU2         R K     K N F T Y V D N S V N Q F L D R F Y L S R I G I R M L I G Q T I A L N Q Q
UniRef90_B7G1D5         K A V R S G Q V K M E E C H K F L D R F Y T S R I G I R V L A G Q Y L A L H S N
UniRef90_B6JXT8         S R V K R     I D P G I Q K F L D R F Y M S R I G I R F L L S Q Q I T L T E P
UniRef90_F0VPM2         R R F     P D I F T D E F V D D F L D G F F L S R I G T E M L T S A Y L S P S G
UniRef90_W6MHU0               P L N L F N G A E F L D N H L K E R I M M R L V A N H H M S L S A Q
UniRef90_X6MDY8         E Q N P M I R I E E T Y L N D F V D R I C H L R V S L R I L L G H H I
UniRef90_E4XHH9         D E Q V E M A D A E E K V H Y F L D R Y F T T L V S T S L I I H Q H L
UniRef90_C5K780         E S V R S Q Y D A R T H I E R R L D D F F S T R I S C R L M I S H I L A L N E
UniRef90_T5A8I7
UniRef90_B3RJW8           D S A Y K S V A A Q D H S E S L D K I L K W Y L G I K I L A E H Y V A L H H P
UniRef90_T1JAD9         R H L K Q E G L     V K N F L D R T L T S R L G L R M L A E H H L A L S E E
UniRef90_K0T4H3         A A I R
UniRef90_F4RD89         N R L         P S H Q I N P F M T Q M L Q S R I S R R V F V K H S T T L M K R
UniRef90_S9V5Q7         N R E Q W S S H Q E
UniRef90_Q0UQV2         E S T S         S P K D V T R F L D E H L R A R I G T R L I A E Q H L S L H F S
UniRef90_E9AUG9         E Y V S S H R R A L V D L K K
UniRef90_K4DTY1         K L L S R H
UniRef90_G7YGR5               S R I T D T N L I T G F L N R T L T S R M A T R L L A E H H L A L R E N
UniRef90_S9VK56         D H L S R H R R A L L E L K E
UniRef90_G0TR18         G I L S S H E R F L M D A Q E   M N S F
UniRef90_X6NKP2         P S Q A P Q V R A C K F L N S F L D R F H L S R I G T R L L T G Q L C A L Y A E
UniRef90_U6KMJ1
UniRef90_R1BYB1         P H L A V D K Q       L D A I F L A R I G L R V L H E H Y I R A V Q P
UniRef90_S9V602         E R V S L H R K A L V E L K S
UniRef90_J0LE17         V L I R R T Y V E P E A L D A F M R R M L V S R I S P R V L V Q H H I A L S Q S
UniRef90_X6MG60
UniRef90_D8LV14         Q M R E K T Q N P N E M I N V S L D D F V G F H I S I I M L L G Q Y
UniRef90_H2NVM3         Q D G R K D P C L Q E H P R E R W D R L
UniRef90_C9ZHT4         D L L S C H
UniRef90_G0UIT4         D L L S C H
UniRef90_U6HCL0         E K H G E D P V T N N Q L Q Y F L D R L F L M R I G I R M L A H T A V L V F G P
UniRef90_C4R8U4         K Q L S M N E F D N Q Q I H R Y L N M L F S S R I G T R V L L A Q H L Q L Y
UniRef90_C4R8U4         K Q L S M N E F D N Q Q I H R Y L N M L F S S R I G T R V L L A Q H L Q L Y
UniRef90_B7G0M6         N I D G         D E T Q V D S H V D E F L Q G R L G V Q L L C D H Y V R L Y K G
UniRef90_K8YT64         Q A E G A P P P P G T D V T S Q V D R F L Q A R I G I A T L I R H Y L
UniRef90_I2JUU4         A G L V D E       K A F L D S H M K E R I L M R L

lupas_21
lupas_14
lupas_28
```

```
UniRef90_UPI00044133E2
UniRef90_A8Q5Z3
UniRef90_C5DVN1          S
UniRef90_C5DVN1          S
UniRef90_J9VKF9
UniRef90_J9VKF9
UniRef90_B7G6S3
UniRef90_A0A024J6C1     K F A K D
UniRef90_A0A024J6C1     K F A K D
UniRef90_G0W3N5
UniRef90_E9BGL3
UniRef90_C4XYS9
UniRef90_C4XYS9
UniRef90_UPI0004417E81
UniRef90_W1QLB2
UniRef90_R9XDV9          S
UniRef90_G0V8U8          K T E P D
UniRef90_M5ECI5          Y M A P S
UniRef90_K7VZL1          K P E P G
UniRef90_K0RFK1          D E N S D
UniRef90_F0WW98
UniRef90_E8Z6U5          R A R G G
UniRef90_Q6BU60
UniRef90_J9VW37
UniRef90_J9VW37
UniRef90_W0T6D9          D E N
UniRef90_I1BN76
UniRef90_A9USM8
UniRef90_W0TE38          A R Q P
UniRef90_W0TE38          A R Q P
UniRef90_W1QEH8          L N
UniRef90_K4E9L5
UniRef90_J7S6S2
UniRef90_H3E330
UniRef90_H2B023          S D S R H
UniRef90_Q9P6P9          P P R E N
UniRef90_UPI000185F01D
UniRef90_F2TWS3
UniRef90_J3PN56
UniRef90_T1IX65
UniRef90_Q756J1
UniRef90_Q756J1
UniRef90_G0UB15
UniRef90_R9XG93          A R
UniRef90_R9XG93          A R
UniRef90_G8JPW8
UniRef90_G8JPW8
UniRef90_K0KLR6
UniRef90_I2GXZ6          D D N G
UniRef90_I2JXU2
UniRef90_I2JXU2
UniRef90_B7G1D5          H A S S G
UniRef90_B6JXT8          L R P G
UniRef90_F0VPM2
UniRef90_W6MHU0          L A P
UniRef90_X6MDY8
UniRef90_E4XHH9
UniRef90_C5K780
UniRef90_T5A8I7
UniRef90_B3RJW8          K P
UniRef90_T1JAD9          T P N H
UniRef90_K0T4H3
UniRef90_F4RD89          S L S D D
UniRef90_S9V5Q7
UniRef90_Q0UQV2          S Q P H
UniRef90_E9AUG9
UniRef90_K4DTY1
UniRef90_G7YGR5          R P
UniRef90_S9VK56
UniRef90_G0TR18
UniRef90_X6NKP2          Y Y N N D
UniRef90_U6KMJ1
UniRef90_R1BYB1          P R Q G
UniRef90_S9V602
UniRef90_J0LE17
UniRef90_X6MG60
UniRef90_D8LV14
UniRef90_H2NVM3
UniRef90_C9ZHT4
UniRef90_G0UIT4
UniRef90_U6HCL0          E F N K H
UniRef90_C4R8U4
UniRef90_C4R8U4
UniRef90_B7G0M6          S P N G G
UniRef90_K8YT64
UniRef90_I2JUU4


lupas_21
lupas_14
lupas_28
```

```
                    1                    10                              20                              30                    40
jnet
conf                7  1  7  9  9  9  8  6  1  4  7  8  8  6  3  1  6  8  8  7  7  5  2  6  7  7  1  1  3  8  9  9  9  9  9  9  9  9  9
sol25                              B           B  B              B        B  B                          B  B           B  B           B  B     B  B              B  B
sol5                               B              B                       B        B                                   B  B           B        B  B
sol0                                                                                                                                  B
jhmm
jpssm
```

jnet

conf 9 9 9 9 9 9 9 9 8 6 2 3   6 6   4   4 4 5 6 6 4 1 7 9 9 9 9 9 9 9 9 9 9 8 7 4 0 5   7

sol25 B B B B   B B   B B   B B   B   B   B B   B B   B B B   B B   B   B   B

sol5   B B   B B   B   B   B   B B   B B   B B   B

sol0   B   B   B   B

jhmm

jpssm

50   60   70   80

```
                                          90                    100              110                    120
jnet
conf      7 8 7 7 7 6 4 2 7 9 9 9 9 9 9 9 9 9 9 9 9 8 6 1   1 8 8   1 1 8 9 9 9 9 9 9 9 9 9 9 9
sol25                         B B     B B   B B     B B   B       B B     B B B B B
sol5                              B       B       B                 B   B B   B B     B
sol0                                                               B B     B B
jhmm
jpssm
```

													130													140												150												160
jnet																																																		
conf	8	5	1	6	8	8	8	7	6	4	4	5	8	9	9	9	9	9	9	9	9	9	9	9	9	2	1	8	8	8	7	4	2	1	3	2	2	4	7	8
sol25			B										B				B	B		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
sol5													B				B			B	B		B			B	B			B	B				B	B		B		
sol0													B																		B	B								
jhmm																																								
jpssm																																								

jnet
conf   8 8 8 9 9
sol25
sol5
sol0
jhmm
jpssm