```
                          1              10             20             30             40
QUERY                   A E T K I V V G P Q P F S V G E E Y P W L A E R D E D G A V V T F T G K V R V N
UniRef90_UPI00025566EA      M S I R V Q P D A F D P G D E L S R L H A Q N G V G A V V T F V G Y V R V G
UniRef90_D0I6Y4               I S V Q E Q D F S V A E E Y E R L N D H A G D G A I V T F V G K V R V A
UniRef90_K4JU4                H I A V Q T E D F D H T S L Y Q R L L S D P E I G A I V T F T G L V R V A
UniRef90_V5CAS0          N T R I R V G A A P F S V G E E Y P W L A E C N D D G A V V T F T G K V R V S
UniRef90_W1ISA8          N T R I C V Q K E M F N V G A E Y Q W L A Q C D E D G A V V T F T G K V R V R
UniRef90_S6AA21            M E V R I Q T E D F D L G A E I L N L R R N P G I G A V A S F V G L V R V T
UniRef90_C7BRY9          N T R I F V G L E N F N V G D E Y E W L S Q C D E D G A I V T F T G K V R V S
UniRef90_B7VLU8          D P R V L V M A E D F S V G D E Y D Y L A Q G T A A G A V V T F V G K V R V I
UniRef90_J7TF97          N T R I A V Q T D N F S V G E E Y Q W L A G C A D D G A V V T F T G K V R V A
UniRef90_UPI0002DEFEB6       V S V Q F D D F D I G L E Y Q H L S Q G T Q A G A V V T F V G K V R V T
UniRef90_E8XMD2          Q T K I V V D A A P F S V G D E Y N W L A Q S D A D G A V V T F T G K V R V S
UniRef90_I1DV55             V A V Q S D D F C V A S E Y N E L R R Q S G C G A I V T F S G L V R L H
UniRef90_U3ALD8          D T R V S V Q L E D F S L E L E H Q R L S A A H A A G A V V T F T G K V R V T
UniRef90_V9ZZM8        S T D R I L V Q R A D F S L G E E Y E R L A T R H D T G A I V T F V G K V R V K
UniRef90_G0A930             M P I R V Q A E D F D F A A E L A Q L R S N P K I G A V V S F L G T V R V A
UniRef90_Q4ZXJ7           M S V R V Q A E A F D P G T E V N A L H A A N G I G A V V S F V G Y V R V S
UniRef90_A1SBH4        S Q N R I L V Q T A D F S V P E E Y Q R I A A D N Q D G A V V T F V G K V R V S
UniRef90_R8AVV3          E T R I R V S E D D F D I A A E Y T W L N Q D D S C G A V V T F V G K V R V N
UniRef90_UPI0003712CE8       M T V R V Q T A D F D L T A E V A A L A Q N P K V G A V A C F I G T V R V A
UniRef90_UPI0003685F2A    Q C E V R V Q T A D F D V S T E L N L L R Q Q S Q T G A V N F V G T V R D I
UniRef90_UPI000420E386         I S V Q K E D F D V A A L Y Q A L Q Q N P S S G A V V T F T G L V R V N
UniRef90_U7A4A3            M G I Q V Q Q Q A F S L D A L N T A L A G D P A V G A V V T F V G Y V R V Q
UniRef90_J2WDA2            M A I R V Q Y K S F D I G Q L T A D L H A R P R V G A V V T F I I G Y V R V S
UniRef90_Q8XZR3               I R V Q E A D F D L G A E I A A L R A R P Q I G A V A S F I G T V R V S
UniRef90_S9QK05            M R V L V Q E A L F D A G A E L N A F A K D T D I G A V V S F T G V T R D V
UniRef90_H2FWH8               I R V Q T E D F C L A T E Y A A L S Q S H Q T G A V V T F V G K V R V S
UniRef90_K9DCP6              V R V Q A G D F D L G Q E V A R L R A N D A I G A V V S F V G T V R V S
UniRef90_E7RU26              I H V Q T Q D F D V G A E L K R L Q A L T E V G A V A S F V G Y V R V T
UniRef90_D0U4G1             K I N I Q K K D F D L T L E V N A R G D D S D I G A V V S F V G T V R D Q
UniRef90_R4WYP7        A Q T K I R V Q E A D F D I S A E V A A L A D N P K V G A V A C F V G T V R D E
UniRef90_W0V4D7              V R I Q T D D F D L S S E V A R L R A Q P Q V G A V V T F V G T V R V S
UniRef90_UPI00035EEC47     R V R I Q T E D F D L G A E V A A L R A D P A V G A V A V F V G T V R V R
UniRef90_Y0KGM8             V K V Q I E D F D V G E V L A S V R D H P Q I G A I V S F V G L V R V T
UniRef90_W8QVC7           M S V R V Q Q A A F D P G A E L N A L H A A N G I G A V T G F V G Y V R D A
UniRef90_V5PTJ4            M P I R V Q T E D F D L S E E I R Q L R A N D R V G A V A S F V G Y V R V S
UniRef90_M5DX35          D S I T V Q T N D F N I A D E Y Q A L C Q N T E A G A I V F F S G L V R V T
UniRef90_D2TYC3          D T R L V I Q Q A N F N V A E Q Y E W L A Q C Q D D G A V V T F T G K V R N H
UniRef90_Q47CH2           M T V R V Q G A D F D V G A E L A A L R A D A R V G A L A S F L G L V R V S
UniRef90_W0DPG3        S N P F V R V Q E A D F D L S T E V N W L R E H A D V G A V V S F I G T V R V N
UniRef90_UPI00037BF2DF    M S V S V Q A D F D I G A E I D A L A G R G D I G A V A T F T G L V R V T
UniRef90_UPI0003A23DC1    M A I T V Q T A S F D P G A M L N R L H A Q Q G V G A V T G F T G Y V R V A
UniRef90_UPI0003690D60    M T V R V Q T E D F D V G L E I N Q L R A R K D I G A V V S F V G L V R V T
UniRef90_R5DYC0           M K I A V Q T E D F D V Q A E V A A L H A F P K V G A V V M F L G T V R V A
UniRef90_E3F1A5           M D I R V T E Q P F D G G A E L N A F S A R A G A V V T F N G V V R D Q
UniRef90_I4KX80           M P I Q V Q T E L L D L G E L T R S V A E D P G V G A V A T F V G Y V R V S
UniRef90_Q6SGI8          D K I V V Q T E D F D L T T E V A H T R S N P Q I G A I V S F I G T V R D S
UniRef90_F6ABC6           M G I R V Q Q A V F D P G L E T N A V H A A N T G G A V A C F V G Y V R V A
UniRef90_F0Q0G3             R V S I Q P Q D F D V S A E L A A L A Q D P G V G A V C C F L G T V R V A
UniRef90_F1W203           M T I R I Q Q A D F D M S T E L A N L R A S P Q V G A I V S F V G T V R V S
UniRef90_UPI00035C9A81      S I S V Q A D D F D I T G E I N A L A D R V D I G A I V T F T G T V R D T
UniRef90_D7DHS6           M T V R V Q T Q D F D A G F E I S L L R A R K D T G A V V S F I G Q V R V S
UniRef90_UPI000255791D       I R V Q S A P F D P G A E L S A L A A R A G C G A V V S F T G L V R D S
UniRef90_UPI00037F6724       I K V Q S E D F N Q Q V E Y D R L R K D P S V G A V V T F S G L V R V S
UniRef90_L1LRS1           M S V R V Q A A P F D P G A E T N A M H A A N V G V G V R D F N D G L D V A
UniRef90_W0TRL2              I A I Q T E I F D P A H E E Q Q L R Q N P R V G A V V S F L G L M R V Y
UniRef90_UPI0003792B38   M K I L V Q S E A F E L G A E V D A L R R R T D I G A I A S F V G L A R V A
UniRef90_C9Y6K3       A T P R V R I Q T E A F D L G L E I S Q L A A D P R V G A V C S F V G T V R V Q
UniRef90_Q2CCH3           M S V R V Q Q P E P F D A G A E L N A F A A R A S A G A V V T F T G L V R D A
UniRef90_Q2W0M6           M A V R V Q R E D F D P G A E L E R F S S K T S V G G I C L F V G L V R V N
UniRef90_J3GKR7           M S V R V Q Q C E V F D V G R L I D S L Q A D P G V G A V V N F V G Y V R V A
UniRef90_W7QV17              I K V D D F N V A E Q Y Q Q L I Q N N Q D G A V V F F V G L V R D K
UniRef90_J1Q163             R I V V Q Q P D F A V A S E Y E R L R Q D A R C G A V V T F V G L V R L L
UniRef90_A9DUJ9           M R V L V Q E A P F D L A E E T A R F A K G E G G G A I V T F V G V V R D S
UniRef90_J2LJL2        A S P R V L I T T D D F N L A D E V A A L R A D K R V G A V C T F T G T V R V S
UniRef90_W9V6X1             R I Q T Q C F D I S Y E I I E A L H Q R T D I G A L V S F L G Y V R V I
UniRef90_UPI0004646254     K V S V Q P G D F D V G A E L Q Q L R A A P Q A G A L V N F V G L V R V T
UniRef90_UPI000462FFC4       I K I Q Q E D F D L S T E I K A L R E H K D I G A V V S F I G T V R D I
UniRef90_Q089W7       Q I V V R V H T E D F S V A D E Y A L L A C D K Q D G A I V N F V G K V R V T
UniRef90_M9QZZ5             I R V Q A M P F D P G G E L N V F S A S A G A G A I V S F T G V V R D S
UniRef90_B4ESV3          T R I S V Q N E H F N V G A E Y Q W L S E C E S D G A V V T F T G L V R V N
UniRef90_Q21HF9             I R V Q T E D F H L Q T E Y E Q L Q K H G H S G A I V T F V G S V R D F
UniRef90_H0PTI2           M S V Q E D F D L G A E I A A L S D R R E V G A V A S F V G L V R V A
UniRef90_K9H448           M A V R V Q R E D F D V G A E M A A F A G D T S V G A V A S F V G L V R V S
UniRef90_A3JRD2           M G V R V Q T D P F N A G A E L K T F S S Q T N A G A V V T F G I V R V A
UniRef90_UPI0004692A11    M R I S V Q E S P F D L G K E T A G F S A R K D M G A L V T F T G V V R D Q
UniRef90_A0A011Q874       M M V R V Q E A D F D V G A E L A A L R D R P Q I G A L A S F V G V V R V S
UniRef90_F3BJ93            I H I V V Q T D D F N V G D E H N T L C S N N K S G A V V T F T G L V R V I
UniRef90_W4HID8           M R I V V Q E A P F D Y G A E C G D F A G R T D V G A V V T F A G L V R S D
UniRef90_UPI0003F5A0F5  Q A R V F I Q T Q D F D V S A E L A A L R A G D A G G A A C C F V G L V R V A
UniRef90_UPI0004754C54      M H I E I S Q R D F D L G T E V K R L V D D N G I G A S C S F V G Y V R V V
UniRef90_UPI000380105F         Q R E D F D L G A E V A A L R A D P G V G A V A S F I G T V R V S
UniRef90_I2JME4             V I V R V G E A D F D V G A E C R A L A S H S Q S G A I V Q F V G L M R V L
UniRef90_U3U9T1          D T R I W I S S E P F N I S Q E Y K L L S S N N S D G A V V T F I G K V R V F
UniRef90_A6GQ83            K V L V Q E A D F D V T E E I R W L R Q G P E I G A V A T F I G T V R V S
UniRef90_UPI00021A5F2D      S I R I Q Q E P F D A G S I I E D T G R N P K T G A V A A F V G R M R D A
UniRef90_A3W4P2           M D V R V Q E A D F D L G S E A N A F A V A K S G M G A V V T F T G I V R D S
UniRef90_F9UCI7             R I R V Q H D L F D S A E E Q K I L R D K P R V G A V V G L M R V V
UniRef90_Q160R5           M R V V V Q D A P F D F G H E A Q A F A R H T S M G A I V T F G V V R D T
UniRef90_H3KD36           T T I V V Q E A P F D A G A E L A A L A G D P S V G G V A T F V G V V R V A
UniRef90_UPI000464ECE3    M R I V V Q E A D F D L G A E L T L V A H P G A V V T F V G L V R V S
UniRef90_I1XNC0          D I Q I S V Q E Q P F D Q N A V Y H W L S G Q H S V G A T V I F V G K V R V S
```

```
                                        50             60             70             80
QUERY                 A L T L E H Y P G M T E K A L A E I V D E A R N R W P L G R V T V I H R I G E L
UniRef90_UPI00025566EA G M F L E H F P G M T E K A L G K I V D E A T Q R W P L L K V E L I H R I G R L
UniRef90_D0I6Y4       G L T L E H Y P G M T E K S N I V E Q A K G R W P L T H V R V I H R I G A L
UniRef90_K4KJU4       G L F L E H Y P G M T E K S L Q A I V D E A R Q R W P I M R V E L I H R V G G Q L
UniRef90_V5CAS0       A L S L E H Y P G M T E K A L G E I V A Q A R S R W S L Q R V T V I H R V G D L
UniRef90_W1ISA8       A L I L E H Y P G M T E N M L Q K I A D E A R Q R W R L Q R I N I I H R I G K L
UniRef90_S6AA21       E M T L E H Y P G M T E K A L A E I M G E A K Q R W N I I G A L V I H R I G P L
UniRef90_C7BRY9       G L R L E H Y P G M T E K V L R N I V V E A R S R W P L Q R I S I I H R V G A L
UniRef90_B7VLU8       G L S L E H Y P G M T E K S L S E I C D Q A E A R W P I Q K M R V I H R V G D L
UniRef90_J7TF97       A L S L E H Y P G M T E K A L A D I V T Q A R E R W E L Q R V T L I H R V G S L
UniRef90_UPI0002DEFEB6 G L S L E H Y P G M T E R S L I Q I C E Q A K S R W P L L N I R V I H R V G D L
UniRef90_E8XMD2       A L T L E H Y P G M T E K A L A E I V A K A R T R W P L Q R V S V Y H R V G P M
UniRef90_I1DV55       S M T L E H Y P G M T E Q A L T A I A E Q A Q Q R W Q L G A V H L I H R V G T L
UniRef90_U3ALD8       G L H L E H Y P G M T E K S L I D I C N Q A E S R W P L L G V R I V H R I G D L
UniRef90_V9ZZM8       G L S L E H Y P G M T E K A L A D I V A Q A R A R W P L Q E C T L I H R I G D L
UniRef90_G0A930       Q M E L E H Y P G M T E K A L S A I I D Q A K Q R W E I F D A L V I H R I G P L
UniRef90_Q4ZXJ7       G M F L E H Y P G M T E K A L A K I I A D A E Q R W P L L R V D V L H R V G A L
UniRef90_A1SBH4       D L T L E H Y P G M T E K V L D Q I A D Q A R E R W P L N H L T I I H R V G T M
UniRef90_R8AVV3       G L H L E H Y P A M T D K A L N D I I S E A R A R W P L G R V S L I H R V G E L
UniRef90_UPI0003712CE8 A M E L E H Y P G M T E K A L E A I V D E A R L R W P G S D V L I V H R V G K L
UniRef90_UPI0003685F2A H M E L E H Y P G M T E K S I Q D I T L Q A A Q R W Q L L A A T V I H R V G L L
UniRef90_UPI000420E386 A L F I E H Y P G M T E R A L S D I A S Q A K L R W P I N D V A V V H R V G R L
UniRef90_U7A4A3       S L F L E H Y P G M T E R S L R G I V A E A Q R W P L L R V E L V H R V G A L
UniRef90_J2WDA2       E L F L E H Y P G M T E K S L E Q I A D E A R E R W P L L G V E I V H R V G A L
UniRef90_Q8XZR3       E M E L E H Y P G M T E K A L A N I V D A A M Q R W D L I D A L V I H R V G K L
UniRef90_S9QK05       S M L I E H Y P G M T E R A L T Q I C E E A Q T R W S L A D V L V I H R F G T M
UniRef90_H2FWH8       G M T L E H Y P G M T E H A L A Q I V S E A Q G R W P L L E C R V I H R V G A L
UniRef90_K9DCP6       E M E L E H Y P G M T E K S L E A I A A R A C E R W P L Y G T L V I H R V G P L
UniRef90_E7RU26       G M T L E H Y P G M T E K A L A D I C Q R A Q T R W P L L G V T V I H R V G P L
UniRef90_D0U4G1       K M T L E H Y P G M T E K A L E S I A T Q A Q G R W P L G N I T I I H R V G D L
UniRef90_R4WYP7       T M E L E H Y P G M T E K S L E A I A E Q A R E R W R G S D V L I V H R V G K L
UniRef90_W0V4D7       E M E L E H Y P G M T E Q A I T A I V E Q A K Q R W P L Y G A L V I H R V G P L
UniRef90_UPI00035EEC47 C M E L E H Y P G M T E K A I E A M I D E A Q R R F E I R A A R V I H R V G L L
UniRef90_Y0KGM8       T L T L E H Y P E M T E K S L Q A I V D Q A Q Q R W D I M D A V V I H R V G T L
UniRef90_W8QVC7       G M F L E H A P G M T E K A L L K I V E E A T A R W P L L K L E I L H R I G R L
UniRef90_V5PTJ4       R M T L E H Y P G M T E K A L S A I V A Q A H E R W R L F D A L V I H R Y G D L
UniRef90_M5DX35       G L F L E H Y P G M T E R S L E D I V K Q A R L R W P I L Q V R L I H R I G Q L
UniRef90_D2TYC3       T L T L E H Y P V M T E K A L Q N I A N E A R C R W Q L Q R I C I I H R I G T L
UniRef90_Q47CH2       E M T L E H Y P G M T E K A L E E I V A E A R G R W E L Y D A L V I H R V G P L
UniRef90_W0DPG3       Q L E L E H Y P G M T E K A L E A I R Q Q A H Q R W Q L E S S L I I H R I G K M
UniRef90_UPI00037BF2DF A M T L E H Y P G M T E A A L A D I V E Q A K A R W D I L A V R V I H R V G T L
UniRef90_UPI0003A23DC1 G M L L E H Y P G M T E K A L Q I I V D E A Q G R W P L L S V E V L H R V G R L
UniRef90_UPI0003690D60 Q L T L E H Y P G M T E K S L S S I I N Q A K T R W N I L D A L I V H R V G T L
UniRef90_R5DYC0       S M T L E H Y P G M T E K A L T A I V E E A K K R W D I M D A T V I H R V G E L
UniRef90_E3F1A5       M L E V E H Y P G M T E L L A L R E A A A Q A I T R W S L V D V L I I H R Y G R L
UniRef90_I4KX80       A L F L E H Y P G M T E R A L Q L I V D Q A H E R W P L Q R V S I V H R V G P L
UniRef90_Q6SGI8       S M T L E H Y P E M T E K S L K S I V T E A R E R W D L Q N I T I I H R I G K L
UniRef90_F6ABC6       G M F L E H F P G M T E K A L A G I E S Q A R E R W P L L G V E V I H R V G R L
UniRef90_F0Q0G3       S M E L E H Y P G M T E K S I E A M V D Q A R R F D I F G A R V V H R V G L L
UniRef90_F1W203       Q M E L E H Y P G M T E K S I A V I V E R A R A H W P I A D A L V I H R I G P L
UniRef90_UPI00035C9A81 S M T L E H Y P G M T E R E L Q A V A D E A E A R W P L Q A C R V I H R Y G T L
UniRef90_D7DHS6       Q L T L E H Y P G M T E K A L E A I V N Q A Q S R W D I F D A I V I H R V G I L
UniRef90_UPI000255791D A M E I E H Y P G M T E K A L A A D A S G R W D L G P V L I L H R Y G R L
UniRef90_UPI00037F6724 S L T L E H Y P G M T E S S L A E I V K Q A E S R W N I I D C T V I H R I G E L
UniRef90_L1LRS1       G M F L E H Y P G M T E K A L G K I V T E A G Q R W P L L K V E V L H R V G A L
UniRef90_W0TRL2       A M T L E H Y P G M T E K A L D A I V D E A G Q R W D L E G I R V I H R V G E L
UniRef90_UPI0003792B38 A M T L E H Y P G M T E K A L A A I V E E A Q S R W T L L D V T L I H R V G E L
UniRef90_C9Y6K3       T L E L E H Y P G M T E K S I E A M V D A A F A R F D I Y G A R V V H R V G V L
UniRef90_Q2CCH3       H M E I E H Y P G M T E R A I S S I V A E A T E R F G L D A A L V I H R H G R L
UniRef90_Q2W0M6       A M T L E H Y P G M T E R Q L E A I E A E A R Q R W P L D D T L V I H R F G R L
UniRef90_J3GKR7       G L Y L E H Y P G M T E R S L Q N I I D N A R A R W P L R G V E I V H R I G P L
UniRef90_W7QV17       S L T L E H Y P A M T E K V L N L I V E Q A R E K W P L G R I S V V H R V G T M
UniRef90_J1Q163       S M T L E H Y P G M T E Q A L T Q I A T A A Q Q R W Q L G A V T I I H R V G T L
UniRef90_A9DUJ9       A M E I E H Y P G M T E K A L C E I A E Q A M A R F E L Q D A L V I H R Y G R L
UniRef90_J2LJL2       S M E L E H Y P G M T E K A I E A M I D E A M A R F D I F G A R V V H R V G L L
UniRef90_W9V6X1       A L T L E H Y P E M T E Q A L D E I Q L N A T Q R W P L L G T R V V H R V G R L
UniRef90_UPI0004646254 E M V I E H Y P G M T E K A L Q Q I A Q Q A T Q R W P L L G I R L I H R V G S L
UniRef90_UPI000462FFC4 N E E L E H Y P G M T E K A L E A I R L Q A H E R W P L Q S S L I I H R I G E M
UniRef90_Q089W7       D L T L E H Y P G M T E S V L L Q I S Q Q A C E R W P L N K V T I I H R V G R L
UniRef90_M9QZZ5       G M E I E H Y P G M T E K A L S A I R G E A M Q R W D L A D A L V I H R I G G Q L
UniRef90_B4ESV3       T L T L E H Y P G M T E K A L N D I V E Q A R A R W D L Q R V S V I H R V G Q L
UniRef90_Q21HF9       G G E L D H Y P G M T E K V L E K I E Q Q A N Q R W D L I S T T I I H R V G N L
UniRef90_H0PTI2       A M T L E H Y P G M T E Q A L E E I V A E A R S R W S L H A V R V I H R Y G R L
UniRef90_K9H448       A M T L E H Y P G M T E R Q L E A I E A D A R E R W P L H D V L V V H R Y G R M
UniRef90_A3JRD2       F M E I E H Y P G M T E K A L E K I C D T A I E R W K L A D A L V I H R Y G R L
UniRef90_UPI0004692A11 A L E I E H Y P G M T E A A L T E I A E Q A M A R F S L G D A L V I H R Y G R L
UniRef90_A0A011Q874   E M T L E H Y P G M T E K A L A A M V G E A G R R W K L I D A L V I H R V G R L
UniRef90_F3BJ93       A L E L E H Y P G M T E Q L L Q S I A E Q A Q T R W Q L A R I C I I H R V G Y L
UniRef90_W4HID8       A M E I E H Y P G M T E S A L T A I A E E A A R R W S L Q D V L V I H R V G P M
UniRef90_UPI0003F5A0F5 S M E L E H Y P G M T E K S I E A I I D Q A Q A R F G I H G A R V I H R V G L L
UniRef90_UPI0004754C54 G L E L E H Y P G M T E K S L Q K I A E E A C D R W E I E G I T V I H R I G R M
UniRef90_UPI000380105F A M E L E H Y P G M T E K A L A R I E A V A R E R W A L L G V T I I H R V G P L
UniRef90_I2JME4       T M E L E H Y P G M T E R C I T E I V N R A Q Q R W P L F A V T V I H R V G V L
UniRef90_U3U9T1       T L T L E H Y A S M A E K E L E S I V A N A R K R W T L K K V T V I H R I G K F
UniRef90_A6GQ83       A M T L E H Y P G M T E K A L E N I L Q V A D A R F D I T S A M I I H R V G P L
UniRef90_UPI00021A5F2D Q M T L E H Y P G M T E R A I E N I C Q E A S K R W E L L D I R V V H R I G P L
UniRef90_A3W4P2       T M E I E H Y P G M T Q K A L D T I A N E A A R V R W D I G D I L I I H R Y G M L
UniRef90_F9UCI7       A M T L E H Y P G M T E K A L D G I A I A E E A A Q R W D L E D I S I I H R V G E L
UniRef90_Q160R5       A M E I E H Y P G M T E A A L T D I A E Q A I S R W S L G N A L V I H R H G R L
UniRef90_H3KD36       K L T L E H Y P A M T E K A L A G I V K R A R A R W T L G A V T I I H R V G G P L
UniRef90_UPI000464ECE3 M L E L E H Y P G M T E R A L A G I V K E A A R W P F Q G V V I H R V G P L
UniRef90_I1XNC0       S L Y L E H Y A S M T H K A L L D I A Q Q A K V R W Q L Q K I S I I H R V G L L
```

```
                              90        100       110       120
QUERY                W P G D E I V F V G V T S A H R S S A F E A G Q F I M D Y L K T R A P F W K R E
UniRef90_UPI00025566EA  E P G E P I V F V G T S S A H R E A A F E A C A F I M D Y L K T R A P F W K K E
UniRef90_D0I6Y4      D I G D Q I V F V G I S S A H R K A A F E A C E F V M D Y L K T Q A P F W K K E
UniRef90_K4KJU4      A P A D Q I V Y V G V S A S H R G D A F A A C E F I M D Y L K T R A P F W K R E
UniRef90_V5CAS0      F P G D E I V F V G V S G A H R S E A F D A E F I M D Y L K T R A P F W K R E
UniRef90_W1ISA8      Y P G D E I V F V G V T S T H R S M A F A A A F L M D Y L K T Q A P F W K K E
UniRef90_S6AA21      K P T D Q I V L V A V S S A H R G D A F A A C E F I M D Y L K T R A P F W K K E
UniRef90_C7BRY9      Y P G D E I V F V G V T S A H R S M A F D A A E F I M D Y L K T K A P F W K K E
UniRef90_B7VLU8      D I G D Q I V Y V G V S S A H R G A A F E A C E F V M D F L K T K A P F W K K E
UniRef90_J7TF97      Y P N D E I V F V G V S A A H R G M A F E A A E F L M D Y L K T R A P F W K K E
UniRef90_UPI0002DEFEB6  D L G D Q I V F V G V S S A H R N A A F E A C E F V M D Y L K T Q A P F W K K E
UniRef90_E8XMD2      Y P G D E I V F V G V T S A H R G M A F E A N E F I M D H L K T R A P F W K R E
UniRef90_I1DV55      K P H E Q I V F V G I A S P H R A A A F A A C E F I M D Y L K N R A P L W K K E
UniRef90_U3ALD8      D I G E Q I V F V G V S S A H R A A A F E A C E F I M D Y L K T K A P F W K K E
UniRef90_V9ZZM8      L L G D Q I V L V A V S S A H R D A A F E A C H F I M D Y L K T R A P F W K K E
UniRef90_G0A930      L P L D Q I V L V A V S S A H R G D A F A A C E Y I I D Y L K T E A P F W K K E
UniRef90_Q4ZXJ7      E P G E P I V F V G V A S A H R Q A A F E A C D F V M D Y L K T R A P F W K R E
UniRef90_A1SBH4      H L G E Q I V F I G V S S A H R K A A F A A C E F L I D F L K T K A P F W K L E
UniRef90_R8AVV3      G S G E Q I V Y V G V S S G H R L A F A A A E F I M D Y L K V R A P F W K K E
UniRef90_UPI0003712CE8  Y P L D Q I V L A A A T A S H R H D A F A A C E F V M D Y L K T Q A P F W K K E
UniRef90_UPI0003685F2A  Q P G E Q I V L V A V S S Q H R G E A F Q A C E F I M D Y L K T Q A P F W K K E
UniRef90_UPI000420E386  E V N Q Q I V F V G V N S A H R Q A A F D A C E F I M D Y L K T S A P F W K K E
UniRef90_U7A4A3      R V G E P I V F V G V A S A H R Q A A F E A C D F I M D Y L K T R A P F W K R E
UniRef90_J2WDA2      S V C E P I V F V G V S S K H M A F E A C A F I M D V L K T R A P F W K K E
UniRef90_Q8XZR3      R P E D Q I V L V A V A S G H R G E A F E A C E F I M D Y L K S E A P F W K K E
UniRef90_S9QK05      E P G D N I M M V A T A S R H R A D A F A A A E F L M D Y L K S R A P F W K K E
UniRef90_H2FWH8      E L G D Q I V F V G V A S A H R E A A F A A C H F I M D Y L K T R A P F W K K E
UniRef90_K9DCP6      A P L D Q I V L V A C S A A H R A A F A A C E F I M D Y L K T E A P F W K K E
UniRef90_E7RU26      A P G E Q I V L V A V A S R H R D A A F E A C R F I M D F L K T E A P F W K K E
UniRef90_D0U4G1      D I N D Q I V L V V T T S K H R K S A F E A C E F I M D Y L K T Q A P F W K K E
UniRef90_R4WYP7      K P L D Q I V L V A T T A M H R A E A F E S C A F V M D Y L K T Q A P F W K K E
UniRef90_W0V4D7      K P L E Q I V L V A T S A H R G E A F A A C E F I I D Y L K T E A P F W K K E
UniRef90_UPI00035EEC47  Q P Q D Q I V Y V G V T S A H R A E A F R A C E F L M D Y L K T Q A P F W K K E
UniRef90_Y0KGM8      K P L D Q I V L V V I S S A H R Q A A F S A C E F V M D Y L K T Q A P F W K K E
UniRef90_W8QVC7      E P G E P I V F V G A A S A H R E A A F D G C R F V M D Y L K T R A P F W K K E
UniRef90_V5PTJ4      G P G D Q I V L V A V T S A H R G D A F A A C E F I M D Y L K T E A P F W K K E
UniRef90_M5DX35      D I N D Q I V F V G V S S A H R E A A F D A C R F I M D F L K T E A P F W K K E
UniRef90_D2TYC3      Q P G E E I V F V G V T S E H R S S A F S A A E F I M D Y M K T K A P F W K K E
UniRef90_Q47CH2      K P C E Q I V L V A V T S A H R G E A F A A C E F I M D Y L K T R A P F W K R E
UniRef90_W0DPG3      Q P K D Q I V L V A V A S R H R E N A F H A A H F I M D Y L K T N A P F W K K E
UniRef90_UPI00037BF2DF  R P A D R I V L V V A A G A H R G E A F A A C E F I M D Y L K T R A P F W K R E
UniRef90_UPI0003A23DC1  E P G E P I V F V G V S S A H R A A A F D A C Q F I M D Y L K T R A P F W K K E
UniRef90_UPI0003690D60  Q P S D Q I V L V V S S A H R G D A F S A C E F M M D Y L K T E A P F W K K E
UniRef90_R5DYC0      F A T D Q I V F V G V S G A H R G E A F K A C E F I I D Y L K T E A P F W K K E
UniRef90_E3F1A5      S A G E Q I M M V A T A A P H R L G A F E A A E F L M D Y L K S R A P F W K K E
UniRef90_I4KX80      K V G E P I V F V G V A S Q H R L D A F E A C A F L M D Y L K T R A P F W K R E
UniRef90_Q6SGI8      K V N D Q I V L V V T T S K H R Q A A F E S C H F I M D Y L K T D A P F W K K E
UniRef90_F6ABC6      E P G E P I V F V G V A S A H R Q A A F Q A C E F I M D Y L K T R A P F W K K E
UniRef90_F0Q0G3      A P Q D Q I V L V A V T S A H R G Q S F Q A C E F L M D Y L K T Q A P F W K K E
UniRef90_F1W203      L P T E Q I V L V A V A A A H R G E A F A A C E F I M D Y L K T E A P F W K K E
UniRef90_UPI00035C9A81  S P G E N I V L V I T M S A H R H A A F Q A A D F L M D F L K S R A P F W K K E
UniRef90_D7DHS6      Q P T D Q I V L V A V S S A H R G E A F K A C E F I M D Y L K T E A P F W K K E
UniRef90_UPI000255791D  G A E E P I M M V A T A A R H R R A A F E A A D F L M D Y L K S R A P F W K K E
UniRef90_UPI00037F6724  Q L L D Q I V F V G I A S L H R Q D A F A A C E F I M D Y L K T Q A P F W K K E
UniRef90_L1LRS1      Q P G E P I V F V G V A S A H R Q A A F D A C N F I M D Y L K T R A P F W K K E
UniRef90_W0TRL2      L P E E P I V L V M T A S R H R G E A F R A C E F I I D Y L K T R A P F W K K E
UniRef90_UPI0003792B38  L P G D P I V L V A V A G S H R G E A F A A C E F I M D Y L K T R A P F W K K E
UniRef90_C9Y6K3      Q P T E G V V L V A V T S A H R G Q S F Q A C E F I M D Y L K T Q A P F W K K E
UniRef90_Q2CCH3      A P A E P I M M V A T A A R H R G S A F E A A V F L M D Y L K S R A P F W K K E
UniRef90_Q2W0M6      E P G E R I V L V A A S S A H R D A A F E A C R F L M D W L K T K A P F W K V E
UniRef90_J3GKR7      S I S E P I V F V G V S S P H R Q A A F E A C A F I M D Y L K T D A P F W K R E
UniRef90_W7QV17      Q L G E Q I V F V G V S Q H R Q A A F E A G Q F I M D I L K T Q A P F W K K E
UniRef90_J1Q163      L P N E Q I V F V G V A S A H R A A G F A A G E F I M D Y L K N R A P F W K K E
UniRef90_A9DUJ9      V P G E Q I M M V A S A A R H R R S A F E A A E F L M D Y L K S R A P F W K R E
UniRef90_J2LJL2      Q P L D Q V V L V A V T S A H R G E S F K A C E F L M D Y L K T Q A P F W K K E
UniRef90_W9V6X1      E P T D P I V L V L A V S S H A F D A C S F I I D Q L K T Q A P F W K K E
UniRef90_UPI0004646254  T A Q A Q I V L V A A T S L H R Q A A F E A C A F M M D Y L K T E A P F W K K E
UniRef90_UPI000462FFC4  M P C D Q I V L V A V S S R H R E A A F E A A H F I M D Y L K T N A P F W K K E
UniRef90_Q089W7      S L G E Q I V F I G V T S S A H R K A A F A A C E F L I D F L K T K A P F W K L E
UniRef90_M9QZZ5      E A H E S I M M V A T A S Q H R A E A F E A F L M D Y L K S R A P F W K K E
UniRef90_B4ESV3      N I G E E I V F V G V T S A H R H S A F E S A E F I M D F L K T R A P F W K K E
UniRef90_Q21HF9      A A G D Q I V F V G V S S R H R K N A F A A C E Y M I D I L K T Q A P F W K K E
UniRef90_H0PTI2      E P G D R I V F V G V A G A H R G E S F A A C E F I M D Y L K T R A P F W K K E
UniRef90_K9H448      E P G E R I V L V L T A S S H R G E A F D A C A F L M D W L K T K A P F W K L E
UniRef90_A3JRD2      T A G E D I M M V A T A S K H R K D A F E A A E F L M D Y L K S R A P F W K K E
UniRef90_UPI0004692A11  V P G E M I M M V A T A A P H R N D A F D G A E F L M D Y L K S R A P F W K R E
UniRef90_A0A011Q874  L P G D Q I V L V A V A G A H R G E A F A A C E F L I D Y L K T R A P F W K R E
UniRef90_F3BJ93      A L G E Q I V F V G V T S R H R Q A A F E G A Q F I M D Y L K N H A T F W K K E
UniRef90_W4HID8      R P G E R I M M V A T A A P H R R D A F A A D Y L M D Y L K S R A P F W K K E
UniRef90_UPI0003F5A0F5  A P M E Q I V L V A V T A A H R G K A F E A C E Y I M D Y L K S L A P F W K K E
UniRef90_UPI0004754C54  M L G E Q I V L V V T T S A H R A E A F A A C E F V M D Y L K V D A P F W K K E
UniRef90_UPI000380105F  L P L D Q I V L V A V A S A H R G E A F A A C E F I M D Y L K S E A P F W K K E
UniRef90_I2JME4      Q P Q D Q I V F V G V S A A H R L D A F Q S C E F I M D Y L K T E A P F W K K E
UniRef90_U3U9T1      I P G D D I L F V G L S S A H R S S A F I A I Q F I V D Y L K M Y A P F W K Y E
UniRef90_A6GQ83      Y P E D Q I V F A A A T S E H R Q Q A F L A C E F M M D Y L K T E A P F W K K E
UniRef90_UPI00021A5F2D  K P L D T I V L V A V A S P H R Q N A F L A C E F I M D F L K T R A P F W K K E
UniRef90_A3W4P2      H P D D L I M M V A T A A R H R A D A F Q A A E F L M D Y L K S R A P F W K K E
UniRef90_F9UCI7      R P Q D P I V F V G V S S R H R G E A F A A C E F L I D S L K T R A P F W K K E
UniRef90_Q160R5      V P G E M I M M V A T A A R H R K D A F E A A E F L M D Y L K S R A P F W K K E
UniRef90_H3KD36      D V S D P I V F V G V A A E H R G E A F A A C E F L M D W L K T E A P F W K K E
UniRef90_UPI000464ECE3  R P T D Q I V F V G V A A E H R G E A F S A C E F I M D Y L K T E A P F W K R E
UniRef90_I1XNC0      H T G D E I V L V G T A S A H R G D A Y H A N E F I M D Y L K T K V P F W K R E
```

```
                                      130             140
QUERY                  A T P E G D R W V E A R E S D Q Q A A K R W
UniRef90_UPI00025566EA D T A D G P R W V E G R C S D Q Q A A Q R W
UniRef90_D0I6Y4        R L V A N E R W V E A R D S D Q E A A K R W
UniRef90_K4KJU4        A T P E G D R W V D A R D S D H Q A A T R W
UniRef90_V5CAS0        A T G Q G E R W V E A R D S D Q Q A A K R W
UniRef90_W1ISA8        F L N D G E R W V E A K E S D R E A A S R W
UniRef90_S6AA21        Q T E A G A H W V D A R E S D E T A A Q R W
UniRef90_C7BRY9        F L P D G E R W V E S R E S D Q E A A R R W
UniRef90_B7VLU8        R T T E T T R W V D S R D S D T K A A E R W
UniRef90_J7TF97        T L P E G T R W V D A R E S D Q K A A D R W
UniRef90_UPI0002DEFEB6 R T T D D V R W V E S R D S D A K A A D R W
UniRef90_E8XMD2        A T E E G D R W V D A R D S D K Q A A A R W
UniRef90_I1DV55        H T S N G D Y W V E A K T S D Q H A L T R W
UniRef90_U3ALD8        R T R T E S R W I E S R Q S D Q Q A A L R W
UniRef90_V9ZZM8        L T A E G Q W V E A K Q S D D A A A A R W
UniRef90_G0A930        H T E Q G A R W V D A R S T D D E A L A K W
UniRef90_Q4ZXJ7        N T S E G T R W V E G R H S D H Q A A D R W
UniRef90_A1SBH4        T S D K G Q G W V E A R D A D D Q A A K A W
UniRef90_R8AVV3        Q M P D G A R W V E A K T S D Q E A A R R W
UniRef90_UPI0003712CE8 T T E A G E R W V D A R A S D D E A L A R W
UniRef90_UPI0003685F2A Q T E Q G A Q W L D A R E S D G E A A K R W
UniRef90_UPI000420E386 L S D Q G E Q W L E Q R E S D R L A S K R W
UniRef90_U7A4A3        V T D S G E H W V E G R A S D Q Q A A S R W
UniRef90_J2WDA2        T T P E G A W V Q A R D C D Q N A A L R W
UniRef90_Q8XZR3        Q T A Q G A R W V D A R V T D E R A L A R W
UniRef90_S9QK05        I T A D G S E W V A A K D S D E D A L D R W
UniRef90_H2FWH8        R T A D G E R W V D A K D S D T D A A R K W
UniRef90_K9DCP6        Q T P D G A R W V D A R V T D D S A K A R W
UniRef90_E7RU26        A T T D G E R W V D A R D S D E A A L S R W
UniRef90_D0U4G1        H T T N E S K W V E A K D N D N D A A S R W
UniRef90_R4WYP7        K T E A G E R W V D A R E A D D A A L S R W
UniRef90_W0V4D7        Q T P Q G A R W V D A R V S D I A L S K W
UniRef90_UPI00035EEC47 T T P A G A R W V D A R L S D D E A L R R W
UniRef90_Y0KGM8        T N N E S E R W V E A K S S D D Q A Q A R W
UniRef90_W8QVC7        D T P S G P R W V E G R C S D Q A A A Q R W
UniRef90_V5PTJ4        S T P Q G E R W V D A R E T D T A A R E R W
UniRef90_M5DX35        T R T D G H H W I E S Q T K D Q E A K T R W
UniRef90_D2TYC3        H F T Q G Q R W V E A R L S D Q A A F E R W
UniRef90_Q47CH2        A T P D G G R W V D A R E T D D S A A A R W
UniRef90_W0DPG3        W T P E G E R W V D A R L S D E Q A M Q R W
UniRef90_UPI00037BF2DF D T P A G S R W V D A R E S D D S A A A R W
UniRef90_UPI0003A23DC1 D S A D G P R W V D A R D S D S Q A L D K W
UniRef90_UPI0003690D60 A N S K G E H W I E A K S A D D M A R D R W
UniRef90_R5DYC0        K V G E G T R W V Q A K E T D E A A K S R W
UniRef90_E3F1A5        V T A D G E A W V E A R C S D E E A L K R W
UniRef90_I4KX80        Q T P A G E R W V E G R E S D R L A Q E R W
UniRef90_Q6SGI8        S T E Q K E E W V E S R E S D D E Q K K R W
UniRef90_F6ABC6        D T P S G P R W V E G R D S D Q A S A R R W
UniRef90_F0Q0G3        A T P Q G A R W V D A R A S D D A A L A R W
UniRef90_F1W203        Q T P E G A R W V D A R A V D D A A L A K W
UniRef90_UPI00035C9A81 E T G E G A T W V D A R E S D E L A L K R W
UniRef90_D7DHS6        V T S Q G E R W V D A K L T D D D A R E R W
UniRef90_UPI000255791D S T D A G A S W V A A K D E D E D A L S R W
UniRef90_UPI00037F6724 T N A Q E S Y W V D A R E S D Q E A L N K W
UniRef90_L1LRS1        Q T S E G E R W V E G K Q S D T D A A G R W
UniRef90_W0TRL2        N T G D G E R W V E A R H S D K D A E S R W
UniRef90_UPI0003792B38 V T P E G E R W V E A R A S D D V A A T R W
UniRef90_C9Y6K3        T T P E G A H W V D A R V S D D E A L A R W
UniRef90_Q2CCH3        V T A D G A E W V A A R D E D E A A L S R W
UniRef90_Q2W0M6        H T P E G D A W V E A K Q S D D A A A S R W
UniRef90_J3GKR7        D V V S G T R W V D A R D S D R S A V A R W
UniRef90_W7QV17        Q T E Q G S H W V D A K E S D Q T Q A Q T W
UniRef90_J1Q163        H T S S G E Y W V A A K V S D Q A A L K R W
UniRef90_A9DUJ9        I T A E G E A W V A A K D E D E A A L E R W
UniRef90_J2LJL2        Q T P E G A R W V D A R V A D D A A L A K W
UniRef90_W9V6X1        H T A S G D Y W V S A R Y S D E H A A K R W
UniRef90_UPI0004646254 V G D F G Q H W V E A R A S D E Q A K Q Q W
UniRef90_UPI000462FFC4 T F P D G E R W V D A R V S D K E A E A R W
UniRef90_Q089W7        A G D T G A K W V E A R D S D Q Q A A K M W
UniRef90_M9QZZ5        I T L D G S R W V D S K A E D E D A L S R W
UniRef90_B4ESV3        L S A N Q D R W V D A R Q S D Y D S A K R W
UniRef90_Q21HF9              G D T W V D A K E S D S E A A D K W
UniRef90_H0PTI2        E T P D G A R W V D A R D S D D S A A R R W
UniRef90_K9H448        E T P N G G R W V D A R E S D D A A A R W
UniRef90_A3JRD2        H A K D G A D W V A Q R S E D E D A L N R W
UniRef90_UPI0004692A11 I T A T G A D W V A S K A E D E A A L D R W
UniRef90_A0A011Q874    V T P Q G A R W V A A R A S D D Q A A E R W
UniRef90_F3BJ93        H F K D S S N W V E F K Q S D K K A M G R W
UniRef90_W4HID8        H G P Q G E S W V A K A T D E D A L S R W
UniRef90_UPI0003F5A0F5 Q T P A G A R W V D A R V S D E Q A L E R W
UniRef90_UPI0004754C54 L T N D G D H W V E A R D K D S E R A E K W
UniRef90_UPI000380105F Q T P E G A R W V D A R V A D E A A L Q R W
UniRef90_I2JME4        C T L N G E R W V D A R Q T D Q Q A R K R W
UniRef90_U3U9T1        T T V D G G R W L D V N H S D Q Q S L E R W
UniRef90_A6GQ83        D T P E G S R W V S A R D S D D S A K E R W
UniRef90_UPI00021A5F2D T T E D G E T W V E S R T S D E L A E R W
UniRef90_A3W4P2        V T E A G T D W V A A R D E D E A L S R W
UniRef90_F9UCI7        Q T S E G E R W V D A R V T D D A A A R R W
UniRef90_Q160R5        I T S Q G A S W V A A R D E D E A A L E R W
UniRef90_H3KD36        A T P E G E R W V D A R E S D D K A K A R W
UniRef90_UPI000464ECE3 G T G G A R R W V D A R E T D D H A R S R W
UniRef90_I1XNC0        Q T E K G E R W I E G R D S D Y V A A D K W
```

Multiple sequence alignment

Position ruler: 1 · · · · · · · · · 10 · · · · · · · · · 20 · · · · · · · · · 30 · · · · · · · · · 40

Identifier	Sequence (residues ~1–42)
UniRef90_U4V8W0	M K I S V Q A E P F D Y G A L S N A F A Q H T H V G A V V T F C G I V R D D
UniRef90_W0QMN0	T L I E V Q E T E F D Q N Q I Y R W L S E H H S V G A T T L F I G K V R V S
UniRef90_UPI0003790449	A I Q T A D F D V S A E L A A L R A H D R V G A V C S F V G T V R V L
UniRef90_UPI000462F477	M V V R V Q S D P F D L G G E A N A F A A A Q S G G A I V S F V T G V V R D Q
UniRef90_K1JWN2	T T I R V S E A D F N P G E E I E R L I E S P E A G G V A S F V G V V R V T
UniRef90_UPI000379793E	M A I R I Q T E P F D L G S E V A A L T Q G T D Q G A V V T F S G L C R D R
UniRef90_A0A016XJK9	R V S I Q T C D F N V A T E I A A L R A R D A V G A V C S F I G T V R V S
UniRef90_UPI0003691362	I S V Q T A P F D V G T E Q Q V L R K R T D I G A V V S F V G L V R V Q
UniRef90_F7SNV5	D I A V R V Q E E P F K M D D G Y E S L R K R T D I G A I V T F T G L V R V I
UniRef90_UPI00037BDC08	I R V Q S E D F D L A L E V R K L T E N P A I G A V T A F I G L V R D S
UniRef90_UPI00041B9D6F	I S I Q R E D F N V G D E Y E L L R K T S R S G A V V T F V G L V R V T
UniRef90_D4HZH4	E T R I R V Q E H A P F S I A D E H Q W L S A S D L D G A V V T F T G K V R V S
UniRef90_R9PL25	I K V Q L E D F D V G E E Y Q R L R E R A S A G A I V F F V G L V R V K
UniRef90_D0D0A2	R V V V Q Q E P F D F G A E A E G F A A R H D L G A V V T F T G V V R D E
UniRef90_UPI0002E42688	D K V L V Q E Q D F D L G E E Y S L L S E S S S I G A V V T F V G K V R V I
UniRef90_F2GAM3	I S V Q R G D F D H C E Q Y Q A L E E A D G D G A V V T F V G L V R V S
UniRef90_W0SH31	M S V S V Q E A D F D A G A E I A A L S A R D D V G A V A S F V G L V R V Q
UniRef90_B0UUN3	D I K I S V Q E Q N F D Q N A I Y Q W L T E P H S V G A A V I F I G K V R V S
UniRef90_W9V183	I R I R V Q P E V F N A G Q E I D A I H A R S D I G A V V N F I G Y V R V V
UniRef90_E6PS11	I R I Q N E C F D A G E M R R M R S R T D I G A V A C F E G V C R V Q
UniRef90_UPI0004649959	R V S I Q T E D F D V S T E I A A L R H E N K G G A V C S F V G T V R V A
UniRef90_H0TQU0	V R V Q Q D D F D T A R E I A A L H H R T D I G A V V S F S G I C R L T
UniRef90_G5ZZJ0	I T I T T D N F N A G D E I E A L R L A G V G A I V T F T G L V R D T
UniRef90_UPI0003714CF3	Q I R V Q T D D F D L S H E V K A L R E H K D I G A V V S F V G T V R V A
UniRef90_UPI0004769B46	I S I Q V Q Q Q P F Q I A A E Q E A L R G K P Q V G A L V T F V G L M R V S
UniRef90_K2JUP1	I R V Q R E D F D I G A E I A A L T D N H A I G G V A S F T G L V R D M
UniRef90_UPI0003679449	V R I Q A A D F D V A Q E I G R L T A R A D V G A V V T F T G L C R D E
UniRef90_Q2BJ35	K T V V L V Q T E D F N I G E L S E R V A E D A T S G A I V T F T G I V R L D
UniRef90_UPI0003684A45	M A V R V Q R E A F D V A E E I R L L T D R T D V G G I V T F V G L V R G E
UniRef90_D5X3A0	I T I R I Q T E P F D L G A E L Q A L R A R L D V G A I A S F V G L C R V Q
UniRef90_W9H529	M A I R V Q R E D F D V G A E L A A L T E N N H G G G V T S F V G L V R E S
UniRef90_W5YPA3	I R V Q Q Q D F D P A E E Y R A L R N S G S G G A I A T F T G L V R V T
UniRef90_H5TCE9	I T V Q R E D F D H G R E Y E A L R E A N R D G A I V T F T G L V R V S
UniRef90_B9NUN3	Q M R I A V Q E E E F D L G A E A N A F A A G D A A N G I V T F T G V V R D D
UniRef90_I7DX50	M R I A V Q K D A F D L G E E S Q R F A S D V A A G A L V T F T G V V R M V
UniRef90_C9P3N1	A D E Y A L V A Q D S A A A G A V V T F V G K V R V I
UniRef90_R4YKG7	I S V Q N E D F D F A N E Y Q Q L R K R S Q S G A I V M F V G L V R V S
UniRef90_UPI0003B74F88	M T V R I Q E E D F D P G S E L E K L T G Q T A I G G V T S F I G L V R V T
UniRef90_G2E573	Q I R V Q S A P F D S A A E Q A A L V G D N A I G A L V S F V G L M R V S
UniRef90_UPI0003703F9D	M H I S V Q N E F F D F S K E V E N F S A K E N I G A L V T F T G I V R L D
UniRef90_UPI00035FDA3E	D K I I V Q S E D F D L T T E V A A K A S N S N I G A I V S F V G T V R D L
UniRef90_K7QYE5	Q D S F G L T E A P L D L S S L V A W A T A P E Y G A V V S F L G T T R V A
UniRef90_UPI0004768CE1	M R I R V S E A D F D L Q E E Q Q A L L E T A E A G A V V S F T G Y V R L E
UniRef90_Q0G3D5	K V T V S A E R I D I A A E T M A L S G E P G A G A L V T F S G F C R D E
UniRef90_H0A4J4	I R V Q A F D Q A A E T A A L T A R V D V G G V A S F L G L C R A D
UniRef90_UPI00037D9AA4	D S I S I Q K E D F S I A E L S D Q V R A N D A N G A I V T F T G V V R L D
UniRef90_B6B140	M K I L V Q D A A F D A G A E L N D F T K A S N M G A V V S F T G I V R D K
UniRef90_A3XCE9	M Q V R V Q E E G F D L G A E S D G F A A G S G A G A I V T F T G V V R D E
UniRef90_R0FK11	M R V L V Q Q E P F D F G S E A E F A D A G G A G A V V T F T G V V R E A
UniRef90_A5CWD5	D K I I I Q Q Q D F D L S T E V A L I K N R S D I G A I V S F V G F V R I Q
UniRef90_Q28KC9	M S V Q V R A E P F D Q G A A L N A F S E S A R G G A I V S F T G V T R D V
UniRef90_E0Y0Z9	M S I L V Q K E D F N L S D E L K L L T G D G D A G A L I S F I G V V R G D
UniRef90_G4R680	M S V T L Q S E P F D P G T L F N A F L E H H D A G A A V T F T G L V R V I
UniRef90_UPI00036417FB	K I K I Q N E D F D V S E E T K I L R E N L T G A I V N F V G L V R I D
UniRef90_V5SDX5	M A V R V Q Q H E P F D A V A E V E A L R G R I D V G G I V T F T G L V R G D
UniRef90_A0A011VJX7	Q P H I R I Q T A D F D V A A E I A R L T S R S D I G A V V T F T G L C R D E
UniRef90_UPI0003483A60	D I R V S V Q R E P F A G E D D S R E L S R R H D I G A V V C F T G L V R V T
UniRef90_C7DCM9	M V V R V Q S E A F D A G A E L N Q F T Q T A G A G A V V S F T G I V R D T
UniRef90_Q3SPL5	I T I R L Q E A D F D L A H E V A A L S R R T D I G A V V T F S G I C R G D
UniRef90_D5AQH3	M Q V R V Q D A S F D F G A E L S A F S E R E N V G A V G F L G L V R D D
UniRef90_UPI000363A6D5	I S I Q T E D F D I A S L H E Q L A E D A S C G A I V T F T G L V R L R
UniRef90_UPI0001C8772D	I S I R D T D F D I A E E I R Q L S E R K D I G A I V S F T G L C R D E
UniRef90_W0HZZ4	T L I E V G T A D F D V A A L Y A W L S A S D T D G A V V T F T G K V R V S
UniRef90_UPI00047600EF	E V C E T P L D V A A E Y T A L Q G N S G D G A C A L F V G S V R V C
UniRef90_D3PKL1	S F G L T Y E A L A L Q P W V D W A S D H P Y G A V V S F L G T T R V S
UniRef90_A4GIH1	V S I R T A D F D A G V E I D K L R R A G V G A I A T F S G I V R N D
UniRef90_UPI000366DB63	D P R F E I T T E P L S S D R L I R K V S N P Y A G A V L T F V G T V R T L
UniRef90_H8YYM4	V R V Q L Q T F D P E Q E Q R A L R E A P G I G A M V S F V G I L R V H
UniRef90_UPI000476FCA4	S I Q S A P F D V A A E M A A L S G Q G R T G A I V T F T G L C R D T
UniRef90_I8AGQ3	F A I T T L P L N V E A L I S Y V S S P Q A G A I N T F I G T V R E L
UniRef90_I2QHH7	V T I R I Q Q D D F D I A R E I A V L T G R T D I G A V V S F S G I C R G D
UniRef90_P65396	S I S V R S E D F D I A A E I D R I G K R R E I G A I V S F T G L C R D E
UniRef90_UPI000469C282	M R I S V Q E Q A F D L G A E A E A F A S R R D M G A I V T F V G V V R D E
UniRef90_W4Z164	V K L T T D I L S V E R A V Q T V T D P S C G A V S M F L G T T R V V
UniRef90_D5VDN4	M K I V L T D R P F E P G A L V T A F A E T G A V V A T F V G L A R A E
UniRef90_X2HBA7	D I I K V N E E S I D N N Q L I N W L S V L P Q D G A L V T F M G K V R C S
UniRef90_S6GK18	S E N H I N I Q V E N F D Q G K L I A W L Q E N E S Y G A M V T F T G V V R D T
UniRef90_Q21AW2	A P V T I R I Q H A D F D L A Q E I T A L A S R T D I G A V V S F S G I C R G D
UniRef90_G4CQT6	V R V Q H A D F N L Q N E Y D A L L K D A E N G A V A A F V G R V R D R
UniRef90_B9L0Z7	F S I G P E P L D P R R I E Q L V A D P R A G A V L F I G T V R D H
UniRef90_F3KDE6	M A V T V Q T E D F D V P A L Y Q A L A D A P Q I G A I V T F T G L V R V E
UniRef90_V6F689	I R V Q A E D F D P A A E L A A F S A N G K V G G I C M F L G L V R V S
UniRef90_A0A017HN18	M E V R V D A A P F D P G A E L T G F S A G G E G A V V S F T G V V R S D
UniRef90_E4U5Y7	D D R T G L T E E P L E P L G E L V A W A T A P P Y G A V V G T T R V R
UniRef90_UPI0003734E95	I K I Q Q A D F D L T V E N A K L R G H K D I G A V V S F V G T V R V A
UniRef90_UPI00047ED6B6	I I V R V G P D D F D V G A E I D A L A G D P A V G A T S F V G Y Y C R D E
UniRef90_V8QQ75	I T I R L Q E D F D A G Q L I R Q A R L H E R S A Q A G A I V V F I G Y V R V V
UniRef90_UPI0003171266	R L Q Q E P F D A A A E Q A A L T S R T D L G A V A A F T G L V R A D
UniRef90_W4DIZ4	F E I T D G P I T P A E V S D K V L R R E A G A I T L F L L G T V R T L
UniRef90_U6ZRV8	M G I R V Q D A A F D P G A E L N A M H A A N V G V G A R D F N D G Q D V H
UniRef90_UPI00034CF867	K D S L A I T E A P L S E E V Y A L A D P Q V G A V V L M S G T V R V V
UniRef90_F7TRG4	E P R F A I T E A P L S V E P L K L V S H R N C G A L L T F I G T V R T V

```
                                          50              60              70              80
UniRef90_U4V8W0           T M E I E H Y P G M T E K A I R A H A K T A K D R F S L A E V L V I H R Y G S L
UniRef90_W0QMN0           G L F L E H Y P A M T K K A L Q A I V D E A R Q R W D L Q R V A V V H R I G Q L
UniRef90_UPI0003790449    S M E L E H Y P G M T E R A I E A M I D Q A H Q R F D L Y G A R V V H R V G K L
UniRef90_UPI000462F477    A M E I E H Y P G M T E R A L A K I E D Q A R A R W E L G G V L I L H R Y G P L
UniRef90_K1JWN2           H L T L E H Y P A M T E R A L A G I V E R A R A R W D V C G V T V I H R V G E M
UniRef90_UPI000379793E    G L T L E H Y P G M T E D E L A R I E A E A R S R W P L A D A L V V H R V G R I
UniRef90_A0A016XJK9       A M E L E H Y P G M T E Q A I E G M I D E A Q R R F D I Y A A R V I H R V G L L
UniRef90_UPI0003691362    A L T L E H Y P G M T E Q A L Q D I V A E A E A R W A L Q G I R L I H R V G R L
UniRef90_F7SNV5           G L T L E H Y P G M T E R T L T Q I G E Q A Y Q R W A L Q A V Q I I H R I G D L
UniRef90_UPI00037BDC08    S M T L E H Y P G M T E K M L R E I E T E A H Q R W E L D A S L I I H R Y G Q L
UniRef90_UPI00041B9D6F    A L E L E H Y P G M T E K V L N E L C D E A R Q R W V L G A I R I I H R V G K L
UniRef90_D4HZH4           A L T L E H Y P G M T E K A A I V A E A R L Q W P M Q R V T V I H R I G E L
UniRef90_R9PL25           G L Q L E H Y P G M T E L Q L E K I V A E A K T R W P I Q D A S I V H R V G D L
UniRef90_D0D0A2           G M E I E H Y P G M T E K A L T K I A E E A Q A R W S L G E V L V I H R H G P M
UniRef90_UPI0002E42688    G L N L Q H Y P V M T E K A L H E I C S E A R S R W P L D R V T I I H R V G D L
UniRef90_F2GAM3           G I R I E H Y P G M T E K S L M H I C S E A R K R W Q L G Q I R V I H R V G T I
UniRef90_W0SH31           A M T L E H Y S G M T E K A L D A I V T E A R G R W N I Y G V R V I H R V G R L
UniRef90_B0UUN3           G L Y L E H Y P A M T G K A L Q E I V V E A K K R W Q L Y R V A V V H R V G L L
UniRef90_W9V183           A L T L E H Y P G M T E Q S L Q E I A K S A Q E R W P L E A I T I I H R I G R L
UniRef90_E6PS11           A L E L E H Y P G M T E H S I A H M V Q E A Q Q R W P L Q A T T V I H R V G A L
UniRef90_UPI0004649959    S M E L E H Y P G M T E K S I E A M V D E A M R R F D I F G A R I I H R V G L L
UniRef90_H0TQU0           A L T L E H Y P G M A E A E I M R H A E E A M A R W P L Q G L T V I H R Y G R I
UniRef90_G5ZZJ0           A M T L E H F P G M T E Q E I Q A I I D E A R T R W P L Q G V R V I H R V G R L
UniRef90_UPI0003714CF3    V L E L E H Y P G M T E K A L E N I R Q K A H Q R W P L Q N S L I I H R V G E M
UniRef90_UPI0004769B46    A M T L E H Y P G M T E K A L A A E A A A R W D L L G L R I V H R V G L L
UniRef90_K2JUP1           A M T L E H Y P G M T E K A L A R I E A E A Q E R W P L Q A S L I I H R Y G R L
UniRef90_UPI0003679449    A G E L E H Y P G M A E A E I S R I A A E A L E R W P L S G M T A I H R F G R V
UniRef90_Q2BJ35           A L Y L E H Y P G M T E K A L E K I A E A Q R W E L G N I V I A H R V G T L
UniRef90_UPI0003684A45    A G T L E H Y P G M T E L E L G R I D D E A R E R F G L T G S L V V H R F G E L
UniRef90_D5X3A0           A M E L E H Y P G M T E R A I A D M V H E A Q A R W P L L G V T V I H R V G R L
UniRef90_W9H529           A M T L E H Y P G M T E R Q L A E I E A E A S R R W K L D A T L I I H R Y G R L
UniRef90_W5YPA3           G L F L E H Y P G M T E Q V I E G L V H E A S R R W D V R D A R I I H R V G A L
UniRef90_H5TCE9           N V V I E H Y S G M T E K Y L M Q I C S D A K K R W N L G Q V R I I H R I G T L
UniRef90_B9NUN3           V M E I E H Y P G M T E R A L T K I A Q D A K E R W S L G D V L V I H R H G R L
UniRef90_I7DX50           A M E I E H Y P G M T E R A I K T I T Q E A Q Q R W S L A D A L V I H R H G R L
UniRef90_C9P3N1           G L R L E H Y P G M T E K A L S H I C D D E A R Q R W P L Q Q V R I I H R V G D L
UniRef90_R4YKG7           S M T L E H Y P G M T E N V L N G I A Q Q A E Q R W P L D G V R I I H R V G E L
UniRef90_UPI0003B74F88    G M T L E H Y P G M T E K M L E R I E A E A H E R W P L N A S L I I H R V G P L
UniRef90_G2E573           R M R L E H Y P G M T E K A L A A I A D E A A E R W E L E G I R I V H R V G I L
UniRef90_UPI0003703F9D    Y M L I E H Y P G M T E T Q I K L I V E E T F K R W K I C D A L V I H R Y G K L
UniRef90_UPI00035FDA3E    E M T L E H Y P G M T E K S L K S I V D K A K N K W E L Q S V T I I H R I G K L
UniRef90_K7QYE5           Y L E Y E A Y P E M A E K V M A Q I L G E M R A R W D L G R I A L W H R L G R V
UniRef90_UPI0004768CE1    T M L L E H Y P G M T E S A L E M I A Q E A S Q R W S L K A V N I I H R I G R L
UniRef90_Q0G3D5           A L E L E H Y P G M A E Q E I G K I A E E A A Q R W P L I A V R A A H R Y G K I
UniRef90_H0A4J4           A L V L E H Y P G M T E K A L G D I A A E A E S R W P L T G C T V I H R Y G R I
UniRef90_UPI00037D9AA4    A M Y L E Y Y P G M T E K A L I K I A C E A R E R W L L G N I V I V H R V G R L
UniRef90_B6B140           Q M D I E H Y P G M T E R A L E K I A S D A M G R W N L G D V L V I H R F G A L
UniRef90_A3XCE9           A M E I E H Y P A M T Q T A L E A I A T E A K T R W E L A D A L V I H R Y G R L
UniRef90_R0FK11           D M E I E H Y P G M T E K A L E K I A S E A I A R W D L T D A L V I H R H G R L
UniRef90_A5CWD5           K M T L E Y Y P G M T E K T L K Y I V N K A N K L W H I S N T T I I H R V G D L
UniRef90_Q28KC9           A M E I E H Y P G M T E R A L T E I R S D A M E R F S L S N A M I I H R Y G R L
UniRef90_E0Y0Z9           S L E L E H Y P K M T I T A L E E I K H Q A L K K W E L L D V R I I H R F G Y L
UniRef90_G4R680           S M T L E H Y P A L A Q R Q L D L R A S A M T R F A L R D A E I I H R F G K L
UniRef90_UPI00036417FB    S M T L E H Y P G M T E L E I E K I V K Q S C E R W N I T G V T V I H R V G K L
UniRef90_V5SDX5           S L T L E H Y P G M T E A E L G R I E V E A R K R F D L V D C V V V H R V G E L
UniRef90_A0A011VJX7       G L E L E H Y P G M A E A E V L R I A G D V C G R W P L Q G I T V I H R Y G K L
UniRef90_UPI0003483A60    G L T L E H Y P G M T E K T L E D I A G Q A W Q R W S L N A V R V V H R V G Y M
UniRef90_C7DCM9           H M K I E H Y P A M T Q S A I E A L C D D A R S R W D L A E V L V I H R F G R L
UniRef90_Q3SPL5           A L T L E H Y P G M A E A E I A R H A E E A V S R W P L T G I T V I H R Y G R I
UniRef90_D5AQH3           A L E I E H Y P G M C E S A I A A M V E E A R R R W D L A D A L V I H R H G R L
UniRef90_UPI000363A6D5    G I F L E H Y P G M T Q K A L A I V A A R E R W S L G Q V S V I H R V G E L
UniRef90_UPI0001C8772D    G G E L E H Y P G M A E A E I R R I A H D A I E R W P L S G V S I I H R F G L L
UniRef90_W0HZZ4           T L T L E H Y P G M T E K A L A E I A A Q A R A R W P L T R V A L L H R V G E L
UniRef90_UPI00047600EF    G L A L E H Y P G M T E K S L Q Q I I N D A R D R W S L G R V T I V H R V G P M
UniRef90_D3PKL1           Y L E Y E A Y P G M A E K V M Q Q I I A E M R A R W V L G R V A L W H R L G R V
UniRef90_A4GIH1           A M T L E H F P G M T E Q E I Q N I I D Q A R R R W P L T A V K V I H R I G R L
UniRef90_UPI000366DB63    H L E Y E A Y P Q M A V K K M A E I A A E I E A K W G T Q V A I S H R I G K L
UniRef90_H8YYM4           E M V L E H Y P G M T E K V L H Q L L E E A R A R W S L A G G R I I H R V G A L
UniRef90_UPI000476FCA4    G L E L E H Y P G M A E A E I G R V V E A A Q D R W P L Q A V R V I H R H G L V
UniRef90_I8AGQ3           T G E Y E A Y V P M A E K Q L K K I G T E V Q E K W P G T R I A I H H R I G S L
UniRef90_I2QHH7           A L S L E H Y P G M A E E E I R R H A D E A T S R W N L N G V T V I H R V G R F
UniRef90_P65396           A L E L E H Y P G M A Q A E I S R M A K Q A L E R W P L N G L T I I H R Y G L I
UniRef90_UPI000469C282    A M E L E H Y P G M T E K A I A A M V Q Q A I E R F D L G D A L V I H R H G R L
UniRef90_W4Z164           R L E Y E A Y E S M A E K Q N K L C I E M R Q K W D L H N I L I H H R L G H V
UniRef90_D5VDN4           A L E L E A Y P G F T E A A I G E I A A Q A V A R F H L Q D V Q V V H R I G R L
UniRef90_X2HBA7           G E Y L E H Y A G M T E K V L A N I I A H A R K R W Q L S R V A V I H R I G E I
UniRef90_S6GK18           S L F L E H Y P G M T E K S L A A I I E K A R S R W Q L G R V C I I H R V G E L
UniRef90_Q21AW2           G M T L E H Y P G M A E A E I E R H A H E A C A R W P L T G V T V I H R V G L L
UniRef90_G4CQT6           H L F L E H Y P E V T E H E I E R I A H E A E T R W P L T A C T V I H R V G L L
UniRef90_B9L0Z7           A R E Y E A Y A E A A L E T F A Q I A E E I R Q R W D V L G I A I H R T G R V
UniRef90_F3KDE6           A L L H L E H Y P G M T E Q V L E G L I D E A T K R W P I I N A V I H R V G E L
UniRef90_V6F689           A M T L E H Y P G M T E R Q L A A I E A E A R D R W P L H E V L I I H R H G R L
UniRef90_A0A017HN18       G G E I E H Y P G M T E S A I A M I E E A R G R F G L S A V R V I H R I G R I
UniRef90_E4U5Y7           Y L T Y E A Y E S M A E A T L A R I A G E M R A R W P L G R V A I V H R L G R V
UniRef90_UPI0003734E95    I L E L E H Y P G M T E K A L E K I R L E A H D R W S L E A S L I I H R I G K M
UniRef90_UPI00047ED6B6    G G L E Y Y P G M A E A E I G R V V N E A V A R W P L Y A I T V V H R G G R I
UniRef90_V8QQ75           S L F L E H Y P G M C E Q E L N D I Q A A A R Q R W N L V I D S T I V H R V G A L
UniRef90_UPI0003171266    A L T L E H Y P A M T L A Q L Q A I A A N A A T R W P D T I G T I I H R H G R L
UniRef90_W4DIZ4           Y L E Y E A Y P L M A V A Q L E R I G Q E V N E R W P N T M V A V T H R I G K L
UniRef90_U6ZRV8           G M F L E H Y P G M T E K A L A K I A E E A G Q R W P L L K L E I L H R I G A L
UniRef90_UPI00034CF867    A L E Y Q A Y E P M A L R V F S Q I A A E I R R Q W P V S R V V I H R T G R L
UniRef90_F7TRG4           Y L S Y E A Y I P M A I E K L K Q V E A E I H E R W E N I R V A I H H R I G D L
```

```
                              90        100       110       120
UniRef90_U4V8W0        K P G E M I  M M V A T A A P H R N D A F K G A E F L M D Y L K S R A P F W K K E
UniRef90_W0QMN0        N T G D E I  V L V G V S S A H R G D A Y H A N E F I M D Y L K T R A P F W K K E
UniRef90_UPI0003790449 Q P G E Q I  V L V A V T S A H R G Q S F L G C E F L M D Y L K T Q A P F W K K E
UniRef90_UPI000462F477 H P D D R I  M M V A T A A R H R K D A F E A A E F L M D Y L K S R A P F W K K E
UniRef90_K1JWN2        A V G E H I  V L V V V T S A H R R E A F E A C E F I M D W L K T E A P F W K K E
UniRef90_UPI000379793E L P G E P I  V L V G V T V S A H R K A A F E A A E F L M D Y L K T S A P F W K S E
UniRef90_A0A016XJK9    Q P L D Q I  V L V A V T S A H R G Q S F Q A C E F L M D Y L K T Q A P F W K K E
UniRef90_UPI0003691362 E P G D P I  V M V A V A S A H R R H A F E A C D F I M D Y L K T R A P F W K K E
UniRef90_F7SNV5        T P G D P I  V R V L V A S A H R R D A F Q A C D F I M D F L K T Q A P F W K K E
UniRef90_UPI00037BDC08 A P G D Q I  V L V V T C S K H R Q A A F E S C E F L M D F L K T K A P F W K L E
UniRef90_UPI00041B9D6F Q A N D Q I  V F V G V S S A H R Q D A F D A A Q F V M D V L K T Q A P F W K K E
UniRef90_D4HZH4        F P G D D I  V L V G V S G V H R A A A F A A A E F I M D Q L K T R A P F W K R E
UniRef90_R9PL25        D V S D Q I  V F V G V N S A H R E A S F E A C H F I M D Y L K T K A T F W K K E
UniRef90_D0D0A2        A P G E R I  M M V A T A S P H R Q D A F E A A E F L K S R A P F W K K E
UniRef90_UPI0002E42688 D I A D Q I  V L V G V S S A H R D A A F A G C E F L M D F L K T K A P F W K K E
UniRef90_F2GAM3        G P Q E Q I  V F V G V T S K H R K N A F E A C E F I I D Y L K T S A P L W K Q E
UniRef90_W0SH31        L P G D R I  V F V A V A S A H R G E A F A A C E F I M D Y L K T R A P F W K K E
UniRef90_B0UUN3        N T G D E I  V L V G V S T A H R G D A Y Q A N E F I M D Y L K S K A P F W K K E
UniRef90_W9V183        T P G D P I  V L V A V A S A H R Q A A F D A C N F V M D Y L K T Q A P F W K K E
UniRef90_E6PS11        Q P G D P I  V L V V V A S A H R H A A F E A C A F L M D Y L K T Q A P F W K K E
UniRef90_UPI0004649959 Q P L D Q I  V L V A V T S A H R G Q S F Q A C E F L M D Y L K T Q A P F W K K E
UniRef90_H0TQU0        T P G E N I  V L V V T A S S H R Q A A F E A A E F L M D Y L K T N A P F W K R E
UniRef90_G5ZZJ0        L P Q E N I  V F V G T A S A H R Q A A F D S A S F I M D Y L K T K A P F W K K E
UniRef90_UPI0003714CF3 R P C D Q I  V L V A V A S R H R E A A F E G A H F I M D F L K T H A P F W K K E
UniRef90_UPI0004769B46 T P Q E P I  V F V G V V S R H R T E A F R A C E F L I D Y L K T R A P F W K K E
UniRef90_K2JUP1        E P G D R I  V L V V T A S A H R Q A A F D S A M F L M D Y L K T Q A P F W K L E
UniRef90_UPI0003679449 R P G E N I  V L V V A A S K H R Q A A F E A A S F L M D Y L K S R A P F W K K E
UniRef90_Q2BJ35        P L N E N I  V F V G V G S A H R V N A F E A A Q F V M D Y L K R D A P F W K K E
UniRef90_UPI0003684A45 K P G D P I  V L V I T L S A H R R A A F E A A E F L M D Y L K S R A P F W K K E
UniRef90_D5X3A0        L P G D D I  V L V L V A S A H R A A A F A A C E F L M D Y L K T Q A P F W K K E
UniRef90_W9H529        E P G D R I  V L V A T A S A H R E A A F E S C H F L I D W L K T R A P F W K L E
UniRef90_W5YPA3        A L A D Q I  V F V G V C S A H R G D A F S A C E F I M D A L K T S A P F W K K E
UniRef90_H5TCE9        E A F E Q I  V F V G V S S K H R Q N A F E A A Q F I M D I L K T T A P F W K Q E
UniRef90_B9NUN3        A P G D R I  M M V A T A S P H R K D A F E A A E Y L M D Y L K S R A P F W K K E
UniRef90_I7DX50        V P G E Q I  M M V A T A A R H R S D A F E A A E Y L M D Y L K S R A P F W K K E
UniRef90_C9P3N1        D V G A Q I  V F V G V A S A H R G A S F A A C E F I M D S L K T Q A P F W K K E
UniRef90_R4YKG7        H A A D Q I  V L V G V S S A H R I A A Y E A S Q F I M D I L K T E A P F W K K E
UniRef90_UPI0003B74F88 E A G D R I  V M V A T A S A H R Q A T F D S C H F L I D W L K T K A P F W K A E
UniRef90_G2E573        E P R D P I  V F V G V V S Q H R G D A F R A C E F L I D Y L K T R A P F W K K E
UniRef90_UPI0003703F9D E P G E P I  M M I A T A A Q H R K E A F E A A E Y L M D Y L K S R A P F W K K E
UniRef90_UPI00035FDA3E D V N D Q I  V L V I T A S R H R Q Q A F D S C N F I M D F L K T D A P F W K K E
UniRef90_K7QYE5        D P G E A S I A I  V V S A R H R K E A F L A C Q Y A I D R V K Q I L P V W K K E
UniRef90_UPI0004768CE1 G P K A R I  V L V Q V V S R H R G D A F S A C E F V M D Y L K T R A P F W K K E
UniRef90_Q0G3D5        A P G E E I  V F V A C S S R H R G A A F E A A S F I M D F M K T K A P F W K R E
UniRef90_H0A4J4        L P S E P I  V L V L A A S R H R T A A L E A C A F L I D W L K T G A P F W K K E
UniRef90_UPI00037D9AA4 A L N E N I  V F V G V G S A H R T E G F Q A A Q F I M D F L K R D A P F W K K E
UniRef90_B6B140        K P E D V I  M M V A T A S K H R K D A F E A A D F L M D F L K S R A P F W K K E
UniRef90_A3XCE9        L P G E R I  M M V A T A A R H R K H A F E A A E Y L M D Y L K S R A P F W K K E
UniRef90_R0FK11        V P G D Q I  M M V A T A A R H R V A A F E A A E Y L M D Y L K S R A P F W K K E
UniRef90_A5CWD5        N I K D Q I  V L V I T S S K H R Q T A F E S C E F I M D F L K T Q A P F W K K E
UniRef90_Q28KC9        A P G D V I  M M V A T A S R H R A D A F Q G A E F L M D Y L K S R A P F W K R E
UniRef90_E0Y0Z9        S L G E Q I  M M V A V A S A H R R E A F E A A D Y I M D F L K S R A P F W K K E
UniRef90_G4R680        Y P G E P I  V Q V M T L A P H R Q A A F D G A N F I M D I L K T T A P F W K K E
UniRef90_UPI00036417FB L P S D Q I  V F V G V S A K H R Q N A F D S C N F I M D W L K T K A P F W K V E
UniRef90_V5SDX5        T P G E G I  V L V V A L S R H R Q A A F E A A E F L M D Y L K T R A P F W K R E
UniRef90_A0A011VJX7    E P G D N I  V L V A T A S T H R Q A A F D A A C F M M D F L K S R A P F W K R E
UniRef90_UPI0003483A60 T P G D Q I  V R V S V A S A H R R D A F E A C D F I M D F L K T R A P F W K K E
UniRef90_C7DCM9        A P D E Q I  M M V A T A S R H R R A A F E S A D F L M D Y L K S R A P F W K K E
UniRef90_Q3SPL5        V P G E N I  V L V V T A S S H R E A A F Q G A E F L M D Y L K T K A P F W K R E
UniRef90_D5AQH3        A V G A Q I  M M V A T A A R H R V A A F E A A E F L M D Y L K S R A P F W K K E
UniRef90_UPI000363A6D5 M G N D N I  V Y V G V S S R H R V A A F E A A Q F I M D Y L K R D A P F W K K E
UniRef90_UPI0001C8772D K P G E N I  V L V V A A S F L M D F M K T G A P F W K K E
UniRef90_W0HZZ4        G A G E R I  V F V G V S G A H R A A A F S A A E Y M M D Y L K T R A P F W K R E
UniRef90_UPI00047600EF Q I N D E I  V F V G V T S P H R Q A A F A A C Q Y I M D R L K T E A P F W K R E
UniRef90_D3PKL1        L P G E G S I L I  V V S A P H R P E A F E A C R Y A I E R V K Q I L P V W K K E
UniRef90_A4GIH1        L P Q Q N I  V F V G T A S A H R Q A A F D S A S F I M D Y L K T R A P F W K R E
UniRef90_UPI000366DB63 E I E E A V V I  A V A T P H R A A A F E A G R Y A I E R L K Q I V P I W K K E
UniRef90_H8YYM4        H P T D A I  V L V V T A S T H R S D A F R A C E F L I D A L K T Q A P F W K R E
UniRef90_UPI000476FCA4 A P G D G I  V L V V T A A S H R V A A F E A A S F L M D Y L K T K A P F W K R E
UniRef90_I8AGQ3        A L S D I A V V I  A V S T P H R A A S F E A C R Y A I E R I K E I V P I W K K E
UniRef90_I2QHH7        M P G Q N I  V L V L T A S Q H R Q A A F Q A A E F L M D Y L K T N A P F W K K E
UniRef90_P65396        K P G E N I  V L V V A A S R H R H A A F E A A S F L M D Y M K T N A P F W K R E
UniRef90_UPI000469C282 V P G E M I  M M V A T A A R H R K H A F E G A T F L M D Y L K S R A P F W K C E
UniRef90_W4Z164        P V T E S S V M I  V V S S A H R K E S L E A V Q Y C I D Q L K A T V P I W K K E
UniRef90_D5VDN4        A P G E A I  V F V A T A A G H R R E A F E A C D F L M D Y L K S R A P F W K K E
UniRef90_X2HBA7        N V N E Q I  V F V G V S S A H R A D S F A A A E F I M D I L K N E A P L W K K E
UniRef90_S6GK18        A M H Q N I  V F I G V V S A H R A T A F E A S Q F I M D Y L K K D A P F W K K E
UniRef90_Q21AW2        T P G D N I  M M V L T A S A H R Q A A F Q A A E F L M D Y L K A H A P F W K R E
UniRef90_G4CQT6        E A D D Q I  V L V L T A S E H R K A A F S A A E F L M D Y L K T Q A P F W K Q E
UniRef90_B9L0Z7        D I G E A S V V I  A V S S A H R A E A F E A C R Y A I E R L K Q V A P I W K K E
UniRef90_F3KDE6        R P A D Q I  V F V G V N S A H R D A A F A A A E Y L M D I L K T K A P F W K R E
UniRef90_V6F689        E P G E R I  V L V A T A S S H R E A A F Q S C H F L M D W L K T K A P F W K I E
UniRef90_A0A017HN18    A A G E P I  M M V L T A S R H R R E A F E A A E F L M D W L K S R A P F W K K E
UniRef90_E4U5Y7        N P A E A S I V I I  V V S S P H R P E A F E A A R Y A L E R V K L I L P V W K K E
UniRef90_UPI0003734E95 Y P A D Q I  V L V A V A S R H R E N A F H A A H F I M D Y L K T N A P F W K K E
UniRef90_UPI00047ED6B6 K P G E R I  V L V A V S S S H R D A A F A A C D Y V M D F L K T R A P F W K K E
UniRef90_V8QQ75        T R Q Q Q I  V F V G V T A S A H R H A C E F I M D A L K T R A P F W K R E
UniRef90_UPI0003171266 L P G D A I  V L V T T A S P H R A H A F A A A E F L M D Y L K T K A P F W K R E
UniRef90_W4DIZ4        E I T D I A V V I  A V S S P H R K A A Y E A N E Y V I D R I K E I V P I W K K E
UniRef90_U6ZRV8        A P G E P I  V F V A A A S A H R Q A A F D A C A F V M D Y L K T H A P F W K K E
UniRef90_UPI00034CF867 Q V G E I S V L V A V G C P H R N D S F E A G R Y A I D T L K S A P I W K K E
UniRef90_F7TRG4        Q I E E I A V V I  A V S S P H R N D S F E A G R Y A I E R L K Q I V P I W K K E
```

```
                          130                 140
UniRef90_U4V8W0          I V N G E P R W V D A K P E D E D A L S R W
UniRef90_W0QMN0          Q T Q E G E R W I E G R D S D Q Q A A E K W
UniRef90_UPI0003790449  Q T P Q G A Q W V D A R V S D D A A L A R W
UniRef90_UPI000462F477  H T G T R A D W V A A R D A D E D A L R R W
UniRef90_K1JWN2          R T P E G E R W V D A R E S D E E A R R R W
UniRef90_UPI000379793E  E T A E G A S W V A A K Q S D D D S A E R W
UniRef90_A0A016XJK9      T T P Q G A R W V D A R V S D D E A L A R W
UniRef90_UPI0003691362  H T V S G H Y W V A E R N T D I E D A K R W
UniRef90_F7SNV5          H S R Q G A Y W V K E R H T D Q Q A A E R W
UniRef90_UPI00037BDC08  Q T P E G G K W V D A R D G D T E A T E R W
UniRef90_UPI00041B9D6F  H G V N S A K W V E V R E T D M L A L Q R W
UniRef90_D4HZH4          A T A G G Q R W V A A R D S D R Q A A A R W
UniRef90_R9PL25          R T L G G D V W L D A R E S D L K A K D K W
UniRef90_D0D0A2          R S A G D T A W V A A R D E D E A A L D R W
UniRef90_UPI0002E42688  R L K D S S R W L D S R E S D Q I S M K R W
UniRef90_F2GAM3          G T S E G M K W V T S R S S D Q E A M D R W
UniRef90_W0SH31          E T P E G G H W V D A R E S D D H A A G R W
UniRef90_B0UUN3          Q T C Q G T R W I E H R E S D Q Q A L E K W
UniRef90_W9V183          H S R S G D Y W V A A R H S D S D A V R R W
UniRef90_E6PS11          T T P D G A H W V D A R E A D D A A L A R W
UniRef90_UPI0004649959  E T A Q G A R W V D A R V S D D A A L A R W
UniRef90_H0TQU0          E T E D G T S W V E A K R H D D D A A A R W
UniRef90_G5ZZJ0          E T P A G A S W V E A R D C D D K A L E K W
UniRef90_UPI0003714CF3  T L P D G T R W V D A R L S D D E A K K K W
UniRef90_UPI0004769B46  T T P D G E R W V E A R A T D E A A A G R W
UniRef90_K2JUP1          E T G E G A Q W V D A R E S D D H A L A R W
UniRef90_UPI0003679449  H R A D G S A W V D A K E S D E A A A A R W
UniRef90_Q2BJ35          I S S Q G E S W V E Q K Q S D L D A A E D W
UniRef90_UPI0003684A45  S F A D G T E W V D E R A S D G A A L A R W
UniRef90_D5X3A0          T T P E G G Q W V D A R E S D D A A L R R W
UniRef90_W9H529          E T A K G S H W V E A K E G D D I A A S R W
UniRef90_W5YPA3          I T G D T E H W V E Q K A A D L D R T Q S W
UniRef90_H5TCE9          T T A K G T Q W V K R K D S D E A A A A K W
UniRef90_B9NUN3          I T T S G A D W V A A K D E D E D A L T R W
UniRef90_I7DX50          L T Q D G G N W V E A K H S D E E A L T R W
UniRef90_C9P3N1          R T T H S E R W I E S R E S D D H Q A A K R W
UniRef90_R4YKG7          S T Q D G E R W V D A K N S D S Q Q A A D W
UniRef90_UPI0003B74F88  R T R E G Q E W V E A R E S D D E A S E R W
UniRef90_G2E573          V T D A G E R W V E A R T R D Q E S A D R W
UniRef90_UPI0003703F9D  V L N G E E N W V E A A S G D E T A L S R W
UniRef90_UPI00035FDA3E  S T T K S E N W V K S R S Q D E E K K K H W
UniRef90_K7QYE5          H R P D G S F W V E G F A P E E H R L
UniRef90_UPI0004768CE1  F P L E G Q Y W V E A K E T D E A A L A R W
UniRef90_Q0G3D5          H L K D G S V W V E S K A T D E A A E D R W
UniRef90_H0A4J4          E F A D G S R W V E A R E S D D A A A A K W
UniRef90_UPI00037D9AA4  I T V E G E H W V E A K K T D L D A A D S W
UniRef90_B6B140          Q T G A A Q D W V N S K Q E D E D A L T R W
UniRef90_A3XCE9          I L C D G S D W V S A K A D D E A A L E R W
UniRef90_R0FK11          I L Q N G A E W V A A K S A D E D A L T R W
UniRef90_A5CWD5          H T Q N K S T W V E A K S S D K N Q K K R W
UniRef90_Q28KC9          V T Q R G S D W V A A K D A D E E A L E R W
UniRef90_E0Y0Z9          H S V D G S N W V N V N P E D E K S L T R W
UniRef90_G4R680          E G P D G A K W V E A K E G D D K A T A R W
UniRef90_UPI00036417FB  E N N N Q K K W V D Y N L S D D E A T K K W
UniRef90_V5SDX5          T F A D G A N W V D A R D S D S R A E A R W
UniRef90_A0A011VJX7      H V A G G A E W V A A R E A D E A A I A N W
UniRef90_UPI0003483A60  H A R H G D Y W V S E R G T D H A D A D R W
UniRef90_C7DCM9          V T A S G A E W V A A K D Q D E D D L A R W
UniRef90_Q3SPL5          E G A S G S G W V D A H D R D D T A A A R W
UniRef90_D5AQH3          V S R D G T A W V A A K D I D E D A L S R W
UniRef90_UPI000363A6D5  L L D S D A R W V E Q K G S D L D A A L R W
UniRef90_UPI0001C8772D  H L I E G G T W V E S K A E D E Q S R G R W
UniRef90_W0HZZ4          T T P A G S R W L D A R A S D Q R E A E R W
UniRef90_UPI00047600EF  A V A D E E R W V E A R A S D A A E M E K W
UniRef90_D3PKL1          F L P D G S H W V E G H A P E E H R L
UniRef90_A4GIH1          E T S S G V Q W V E A R E T D D I A L Q K W
UniRef90_UPI000366DB63  V W E D G S E W K G H Q Q
UniRef90_H8YYM4          L T P A G P R W V Q T R E Q D A L S A A R W
UniRef90_UPI000476FCA4  H L A D G T M W V E A T G A D D E A A S R W
UniRef90_I8AGQ3          H W E D G T F W V G N Q Q E
UniRef90_I2QHH7          E S A T G T G W V E A Q A R D D E A T A R W
UniRef90_P65396          H L A D G T A W V S S K E E D E E S R K R W
UniRef90_UPI000469C282  I T A A G A E W V A S M D E D E A A L A R W
UniRef90_W4Z164          I L Y D E G D G W K A N K E C L W A
UniRef90_D5VDN4          H G P D G A R W I E P T D R D R T D A Q R W
UniRef90_X2HBA7          R T I N S D K W V E A K K T D I D A L K K W
UniRef90_S6GK18          V T G K Q N T W V A Q K T S D L D A A D K W
UniRef90_Q21AW2          E K A D G S D W V A A Q Q H D D A A A R W
UniRef90_G4CQT6          R F S D G E H W V E A K Q S D A E A A D K W
UniRef90_B9L0Z7          V Y E D G E I W I G S E A L Y Q E L F A R
UniRef90_F3KDE6          Q R P D G D K W L D A K V S D D E R A T R W
UniRef90_V6F689          H T D Q G D W V A A K D E D D A A R R W
UniRef90_A0A017HN18      H R A E G A A W V A S R D E D E A A L H R W
UniRef90_E4U5Y7          H L E G G E V W V E G G A A E
UniRef90_UPI0003734E95  T L P D G D R W V D S R V S D K E A E A R W
UniRef90_UPI00047ED6B6  H P A D R S E W V E A K A H D D A R A E R W
UniRef90_V8QQ75          T L A D G A F W V Q A R E S D T Q R I E K W
UniRef90_UPI0003171266  E W A D G T R W V D A K G S D D N A A E R W
UniRef90_W4DIZ4          M G E D G E A W V G D Q
UniRef90_U6ZRV8          Q T A D G P R W V E G R H S D Q A A A E R W
UniRef90_UPI00034CF867  H A R D G E R W V S I G A C L E A G A A
UniRef90_F7TRG4          I W E D G N E W K G H Q
```

```
                              1              10                  20                  30                  40
UniRef90_UPI00036CEF71              K I R I  Q A E T F D I  A A E I E D I  I G R P D I  G A T V S F T G H C R D E
UniRef90_V6M3G1            E P L F S I  T T E P L S A D K L I    R L V S N P H A G A V L T F V G T V R T V
UniRef90_UPI000346D9E8      D S F A V  T L A P L S L D T A Y S    L A D D P G N G A V V T F T G R V R V E
UniRef90_UPI00036962A5             I S I  Q A E D F S L A D E V A L L E K D N T D G A V V T F T G R V R V T
UniRef90_B6INV1          M T V R V  Q A E D F D V G A E L A A L R G N P R I G G L A C F V G L V R D L
UniRef90_UPI0003721709         I A L  T T D P I D L G S A Y K F L    Q A D G A G A I D L F L G V V R V D
UniRef90_G9QM53           F K I  T K Q P I K M E E V V Q Q V I   R P E A G A V V T F L G T V R T L
UniRef90_B9JCT8          V K V Q R E D F D L Q T E I D R L T G R H D I G A V V T F S G L C R D E
UniRef90_B3QIH5      V T I R I  Q E A D F D V A A E T A A M R G R N D I G A V V S F M G L C R V A
UniRef90_K2LGK4         R V S V Q Q N D F D P G A E L A A L T D R T D I G A A V S F V G L V R V S
UniRef90_S9S7P5       V R L Q R V P I E L A E L E P I M R N P K V G A V V N F V G V V R V I
UniRef90_UPI00046F9ED7       A V Q E A P F D V A E E M E R L S A L S L A G G V S L F I G Q V R L I
UniRef90_A0A024K7C4        R I Q T A A F D P G E E T N A L A T N A G A G A A V T F T G L V R I T
UniRef90_W4Q1U5        F D I Q D T P L S I Q E V V D K V T R R D C G A I S T F I G T V R T L
UniRef90_W4AM51          I T Y D K L S V E E A V A K V H D A N H G A T L S F I G T T R T V
UniRef90_G2I4Q7      V T I R V  Q A E V F D S T H E T T A L A G Q A V G G V G A F T G F V R L V
UniRef90_L0MGN2       Q D K I V V G A A R F D L A Q E H Q W L S A S D D D G A V V T F V G K V R V N
UniRef90_L0NCP1         I R V Q M Q D F D L Q S E I D A L R G R T G I G A V V T F T G L C R D E
UniRef90_UPI00026250AA    M I V K V K E D F E L S A A C A E M A T V N G A G A L V T F V G T V R D Y
UniRef90_UPI00036DB1F1     K V T V Q E E A F D L Q E E Q R L L Q Q A G D A G A L V A F Q G M V R A H
UniRef90_W8BLF6          S I S P E P L D V G T I S S L V S H E T C G A I S L F V G T T R V Q
UniRef90_E1VQD9         I T V A E Q D F D A A L L T R E L L G Q G D A G A L T T F I G L V R S R
UniRef90_UPI000380EBB2     I T L S P D P F R P S E A L A A F T A A R G A G A I V S F T G L V R V T
UniRef90_UPI0003A3385D  Q P T I L V S Q D D F D A A A L T A R M T E R T D I G A V V S F T G F C R D E
UniRef90_F8FF45         R M I I T R D P I S V E D V T A K V I R P H H G A A L S F V G T T R T T
UniRef90_K9W8W0       Q D S F S I T F A P L S L A E I Y A L A D D P A N G A V V V M S G T V R V V
UniRef90_X5XLU1         V R I Q R D D F D V A A E I A K L T E R A D I G A V V S F S G L C R D E
UniRef90_Z5XMB0        I R V Q E H D F D M N G E Y Q S L A D D S V S G A V V M F V G R V R V D
UniRef90_E3I0L7        I R V Q T D I F D P G E E M A H L G R A A G T G A I A T F V G L V R D E
UniRef90_B7JYI4      Q D S L K M T F A P L S L D E V Y G L A D D P A N G A I V V M S G T V R V H
UniRef90_H5SFU7         D I F A L V R E P I E A R A L V Q R L L R G A A G A V V T F D G V V R V R
UniRef90_UPI00035FF6B1  A H V R V A I V S E P L D I T A E I E R V T G R G D I G A V V T F T G L C R D E
UniRef90_N0B9Z4        M A V R V S T A D F D I S A E M A R L T A S D A I G G V A L F V G K V R D H
UniRef90_W9R915       K T L V E I L D E P I D I S K Y I N Y V S A P Q A G A I A T F S G T T R V V
UniRef90_UPI0002F06FB2      I R V Q S A D F D V G D A G A R E T G P H D I G A I V T F T G V C R N D
UniRef90_K9CLC6         R V A I Q A D F D I S A E L A A L E A L G G G G V A S F T G I V R G E
UniRef90_Q2SWH6         V R V Q T D D F D V S A E I A A L R A R P K V G A V A C F V G T V R V D
UniRef90_UPI00036AC805       I Q L S P H P L S I D A C Y A S V Q D P T C G G I C L F V G T I R V T
UniRef90_X0XNQ4      M L I S I T A D P L D P Q P F I Q H V R R D E S G A V A L F L G V V R V L
UniRef90_Q1NE24         R V V I Q V Q D F D V A G E L A A L E A L G G G G V A S F T G V V R L L
UniRef90_C7JGM9      V R L V Q Q V A F D T G A E T A R L S S S E Q V G G M G L F I G Q V R L L
UniRef90_UPI000360B2E9      R V V V Q E A P F D V G A E L A A L T A R A D V G G I G L F V G T V R D T
UniRef90_F9L530        Q F E I V T E P I Q T E L Y R D Y T L N E H Q G A V V V F T G G V R T E
UniRef90_A0YQB6      S P D H F A I T L A P L S I E E I Y A L V D E P A N G A V V V M S G M V R V E
UniRef90_A0A023CTD2       F V I T D K P I S V E E V V Q K V M R P E A G A V A T F I G T V R T L
UniRef90_UPI000405794B      F L I T Q S P L S V E A T T K L V I T A N H G A A L T F V G T T R T V
UniRef90_A9I047        I I V Q E A D F D S A A L L A R L R E Q A E A G A I V T F T G Y V R D E
UniRef90_J2VFN0         R I V V Q Q S D F N I A A E M E H I T A N R N I G A V V T F S G L C R D E
UniRef90_A9CJG6      A Q P T V R V Q A E D F D A A D E T R L L T Q G D S I G A V V A F T G L C R D D
UniRef90_B2ICS1      Q T I V K I Q K E I F D V Q E C L P L T Q D R K D L G A L V T F T G L C R D E
UniRef90_UPI00016D95D3      D E V A L T F D K L D V G E I N E L V A H E S C G A V A L F V G T T R V V
UniRef90_UPI0003789D4D      R I S I Q E Q D F C L Q Q E L Q A L E S S S N T G A M V S F T G K V R G H
UniRef90_UPI0003826497       I K V Q T E P F N V G E I Y Q N L A N N N A A A G V V F F V G G V R D R
UniRef90_G3VIP1       K D I K F T L E K L S V D E V S Q L V V S P V C G A V S L F V G V V R V L
UniRef90_J5NGL2      S D I Q I A V Q E Q P F D Q N A A Y R W L S E Q H S V G A T V V F V G K V R V S
UniRef90_L7U5W9          F R V V D R P L R L E E V V E A V G G E S Y G G L V T F S G S V R V L
UniRef90_UPI00040FE9FF    T S I K I T S K K L S I H E G Y E F V R D D S C G G I A T F I G T V R V T
UniRef90_Q67JI8          F A I T T E P I S A D E I A A R V T N P H S G A T L V F V G T T R T V
UniRef90_A3IN57       N D S F R I S F A P L S V D E V Y G L V D D P S N G A I A L M S G T V R V R
UniRef90_UPI000374CD84     T N F K I T F A P L S L S Q V Y Q L A D N A G N G A I V L M S G T V R V K
UniRef90_UPI0004747656      R F K I S E T P I I V D E V T E K V V S R N A G A I T V F I G T V R T L
UniRef90_X4Z2R7        I L V Q E A D F D T A A L T A G L R A K A Q A G A I V T F T G Y V R D E
UniRef90_S5YY36       M S A R V Q E A P F D L A A E L R D F G A G A G A I V T F Q G I V R S E
UniRef90_S3IK45     E P D I R V Q R E D F D L Q A E V D R L G R R N G G G A I V T F S G L C R D E
UniRef90_UPI0002FAFC03      V I V Q Q H D F D S A A L V A Q L R E R T A A G A L V T F T G Y V R D Q
UniRef90_W7ZKG4         I Q L T N D P I D I Q A V N Q V T D R N C G A I A T F I G T V R T I
UniRef90_UPI0003491940  H D S F A I T I A P L S L E E A Y S L A D D Q A N G A I V L M S G T V R V E
UniRef90_UPI00047E5804    M V F K I T D A P I D V G R V I E Q V E D R N A G A I N T F I G T V R T L
UniRef90_S2XD74        Q F E V T T E P L N P E Q Y R M Y T L N E K Q G A I V V F T G H V R T Q
UniRef90_UPI000255BB2E  E I S I S V Q A E G F D P G V E Y N L L R S E N V G A T A M F V G N V R D F
UniRef90_D3BU88         I E V S E E P I D F K V G G Y N R V E D D N A G A I S T F L G I T R V V
UniRef90_E2BHL1         I K L Q Q E E L D I A D I I N L V V F P N C G A V S N F I G I T R V V
UniRef90_K4C981         I E I L E A P I D F N K Y I G Y V S S P K C G A I A T F A G T T R D T
UniRef90_E0MLB6          I Q E A D F D P A A E L A A L T A R T D V G A V A T F T G L C R S E
UniRef90_UPI00037C957B  A R C H V S V Q H A D F D F A T E L G W L G D G S G A V A S F I G R V R D T
UniRef90_F5LAH6         D H F K V V P E P I S I E E V V A K V I H P H A G A I N T F I G T V R T L
UniRef90_A0A053P8R5   S D V Y C R L T D E P L S V D E V L N A I S G P S Q G G A V I F V G T V R V T
UniRef90_UPI0003643C1B  A S I R V L V T T E T I D P A A E L V A L E Q G G A V A T F T G L V R V S
UniRef90_W7DKC8          V K I Q E S P F D A E P V L D Q Q I Q I N N C G A I V S F K G I V R L S
UniRef90_W0ADP9        I E V R V T T D E I D P A R E A A R I E A E G V A S T F T G L V R G D
UniRef90_K2Q3T3         I R V Q R D D F D A A A E S R G L A D R K D I G A I V S F V G L C R D E
UniRef90_K1PNA0      D Y I E T D E I L D V N K I S H M V T D P S C G A I S I F V G I T R V L
UniRef90_A1ZKS9      M E F K I T D P I N E Q E V I D T V R S P C G G L S V F V G V V R V I
UniRef90_F1L0I8         V R I Q E N P I C I S D A V D F V T M R S T G G T S L F I G T T R V V
UniRef90_UPI00037AE9AA  M A V R V Q A E D F D P A A E L A L A E E A G A V S F L G H V R V S
UniRef90_UPI0004656B1A     I R I Q S A P F D P G H E A A L I E D R R D I G A V V S F T G L C R D E
UniRef90_UPI00036A90DE      I T L I A E P I D T S A L N Y L Q S E A G A D L F I G T V R T V
UniRef90_UPI0003610F8A    R F A I R M E K L D P D E A L A L V S H P D H G A L F L V G T T R T V
UniRef90_F5Z492          I G D A D F D Q Q W L Y N R L R A K G N V T F T G L V R D N
UniRef90_U9VU10      D S F T I T F A P L S L D E V Y R L A D D E A N G A I V V M S G M V R V V
UniRef90_A6X251         V G I R S E D F D T A A E L R L H G R T D I G A I V T F T G L C R D E
UniRef90_B4W8S0        V R L V F G A L S P A A E L E A L A G R T G D G A V V T F T G L A R V A
```

```
                          50              60              70              80
UniRef90_UPI00036CEF71  G G E L E H Y P G M A E E E I A R I G Q Q A I D R F G L L G L T V I H R F G R M
UniRef90_V6M3G1         Y L S Y E A Y A P M A V E K M K Q I A A E I D E R W P G A R V A M Q H R I G D L
UniRef90_UPI000346D9E8  C L E Y Q A Y E P M A L Q V F R Q I A T E I R R Q W P V R R V V V H R T G R L
UniRef90_UPI00036962A5  S L T L E H Y P G M T E K S L A K I I K Q A K E Q W Q I G R V K V I H R I G E L
UniRef90_B6INV1         H L T L E H Y P G M T E R Q I G A I A A E A K A R W P L E S V L V I H R H G R L
UniRef90_UPI0003721709  R L E Y E A Y D R M A I S E M Q K I V D E A H R R W P L L R C L V I H R T G L L
UniRef90_G9QM53         Y L Q Y E A Y E S M A E K K L R Q I G E E I E K R W P G A K T A I V H R I G R L
UniRef90_B9JCT8         G G E L E H Y P G M A E A E I A R I A T L A I E R F N L R G L T A I H R Y G K I
UniRef90_B3QIH5         A L T L E H Y P G M A E E E I Q R H A D E A I K R W P I T A L T I I H R V G R L
UniRef90_K2LGK4         A L T L D H Y P G M T E R E L E K I A G E A A N R W P L D D I R I I H R F G R M
UniRef90_S9S7P5         A L E L E H Y P G M T E Q T L W T L I E E A T A R W Q V E A V K I V H R V G R I
UniRef90_UPI00046F9ED7  S L T L E H Y P G M T E K V M Q A L A G E A M E R F D L L G C T L I H R V G R L
UniRef90_A0A024K7C4     A L V L E C Y P D L A I N Q V K A M I E S A I A R F G L I K A T V I H R Y G A L
UniRef90_W4Q1U5         K L E Y Q A Y K P M A I K M L E Q I G Q E V Q E K W P G S T I A I T H R V G T L
UniRef90_W4AM51         T L E Y E A Y I P M A L K E M Q Q I C A D I L S Q W P G T Q C A I S H R I G T V
UniRef90_G2I4Q7         A L E L E H Y P G M T E T M M R Q I A E S A C A R F G L A G C T I I H R V G R L
UniRef90_L0MGN2         T L T L E H Y P G M T E K A L A E I V A Q A R S R W G L G R V V V I H R V G E L
UniRef90_L0NCP1         A L E L E H Y P G M A E A E M Q R I A D L A I E R F S L Q G L T A I H R Y G K I
UniRef90_UPI00026250AA  S L E I E H Y P G M T E K E L E R V S M Q A A N A Y D I L D S L I I H R Y G L L
UniRef90_UPI00036DB1F1  A L H L E H Y P G M T E A E I E R I A H Q A A E R W P V S A C R V I H R V G R L
UniRef90_W8BLF6         S L E Y E A Y E P M A K K E L K N I C M E M R S L W D I V N I A I Y H R L G L V
UniRef90_E1VQD9         A M Q L E H Y P G M T E K S L R K I A V Q A I E R W G L L G V S I Y H R V G R L
UniRef90_UPI000380EBB2  G L H L Q A Y S P M T E N G I E T A V S Q A R A R W P L D A V R V I H R T G D M
UniRef90_UPI0003A3385D  A A L E L H Y P G M A A E A Q L A R I A E A A Q L A R W P L Q G I T I V H R S G L I
UniRef90_F8FF45         L L E Y E G Y E P M A L K T M E Q I G G E I E A R W P G T L C A I T H R L G P V
UniRef90_K9W8W0         A L E Y Q A Y E P M A V R V F E A I A D D I R N R W D V N R V V I H R T G R L
UniRef90_X5XLU1         A L E L E H Y P G M A E A E I T R I A R E A L Q R W P L Q G L T V I H R H G K I
UniRef90_Z5XMB0         S L Y L E H Y P A M T E K Y L T Q L E Q Q A L S L W P L E K V T L I H R V G K L
UniRef90_E3I0L7         G G T L E H Y P G M T E R A L A A I A E E A R G R W S V R D I R I V H R V G R M
UniRef90_B7JYI4         Y L E Y Q A Y E P M A L E I F R Q I A V N I R Q E W S D T N V V I H R T G K L
UniRef90_H5SFU7         Y L E Y E A Y E A M A L R M L R E I G R E I R A R W P I D R I G I V H R L G R L
UniRef90_UPI00035FF6B1  A L E L E H Y P G M A E T E V T R I A E Q A A K R W E I S D V T V L H R H G K V
UniRef90_N0B9Z4         A L T L E H Y P G M T E A E L E R I E A E A Q R R F Q V S A S L I V H R V G T L
UniRef90_W9R915         E L R Y E A Y V P M A I K C M K S I C S S A R S S W N L H S V A V V H R L G P V
UniRef90_UPI0002F06FB2  G G E L E H Y P G M A E E E I A R V A A E A E R R W P L K G L C V I H R Y G L I
UniRef90_K9CLC6         A L E L E H Y P A M T Q R Q A E R I A E E A M A R W P L L G L S I I H R H G R L
UniRef90_Q2SWH6         A L E L E H Y P G M T E K A L A A I A D D A I A R W P G I D V A I V H R V G K L
UniRef90_UPI00036AC805  H L N F E S Y A P M A E K E M K R I A D E A K S Q H G L H A V S L H H R T G E L
UniRef90_X0XNQ4         H L E Y D A Y P Q M A E K K L R Q V A E E A M S R W P I I T D I A I A H R T G R L
UniRef90_Q1NE24         A L E L E H Y S A M T Q A Q V A R I A E D A M A R W P L L G V S V I H R V G R L
UniRef90_C7JGM9         S L T L E H Y P G M T E T I L H Q L A Q E A M Q R F N L L G C T L I H R V G R L
UniRef90_UPI000360B2E9  A M T L E H Y P G M T E R A L A A I V A E A Q A R W P L A G C T V I H R V G R L
UniRef90_F9L530         Y L E Y E A Y T P M A E K K L A Q I G D E I K Q R W P G T I T T I V H R I G P L
UniRef90_A0YQB6         A L E Y Q A Y Q P M A I R V F E G I A A E I R Q N W P V S Q V A I H H R I G R L
UniRef90_A0A023CTD2     F L Q Y E A Y V S M A M A Q I G A E I R E K W P E T K V A I T H R V G R L
UniRef90_UPI000405794B  H L E Y E A Y V P M A L S Q M A A I G S E I N E R W P G V I C A I S H R I G Q V
UniRef90_A9I047         T L Y L E H Y P G M C E R E L H D I A A T A Q Q R W N L A G T T I A H R V G A L
UniRef90_J2VFN0         A G E I E H Y P G M A E A E I A R V A T D V L E R W T L T G L T I I H R F G L I
UniRef90_A9CJG6         G G E L E H Y P G M A E A E I T R I A K L A M E R F G L L G L T A I H R H G K I
UniRef90_B2ICS1         G G E I E H Y P G M A E E E I G R I I T E A R R R W P I E D V V V I H R F G M I
UniRef90_UPI00016D95D3  L L Q Y E A Y E A M A L K S M N H I C E E L R G R W D L V H I G I H H R L G T V
UniRef90_UPI0003789D4D  H L F L E Y F P G V T E K E I E K I I L Q A K A Q W P I H Y V R V I H R V G R I
UniRef90_UPI0003826497  A L T L E H Y P A M T E K V L S E I V N E A E R W P L Q A V S L V H R V G R M
UniRef90_G3VIP1         S L E Y E A Y M P M A E A E V R K I C S A V R Q Q W P V R H I A V Y H R L G L V
UniRef90_J5NGL2         S L Y L E H Y P A M T E K A L T E I V A Q A K A R W D I Q R V C V I H R V G L L
UniRef90_L7U5W9         R L E Y E A Y A P M A E K K L A E I G A E V A T L W P G V R L A V H R V G T L
UniRef90_UPI00040FE9FF  Q L D F S T Y K P M A I K E M Q K I A D T A L E K F K I K K I A I H H S E G L L
UniRef90_Q67JI8         Y L E Y E A Y P E M A V A Q M E Q I G R E I A E R W P G A R T A I V H R V G R L
UniRef90_A3IN57         Y L E Y Q A Y E P M A I V I F Q E I A S N I R D Q W T D T N V V I H H R I G K L
UniRef90_UPI000374CD84  Y L E Y Q A Y E P M A I K I F Q D I S H Q I K E Q W D V N S V I I H H R I G K L
UniRef90_UPI0004747656  S L Q Y E A Y P A M A I K M F E Q I E R E M L E K W P E T K L A I T H R V G K L
UniRef90_X4Z2R7         T L Y L E H Y P G M C E R E L E A I A R R A R W Q L A G T V I A H R I G A L
UniRef90_S5YY36         A L E L E H Y P G M T E K A L T R F G T E A A A R F S L S D W R I V H R Y G H H
UniRef90_S3IK45         G G E L E H Y P G M A E A E M S R I G G L A I E R F G L M G L T A I H R Y G K I
UniRef90_UPI0002FAFC03  S L F L E H Y P G M C E R E I T E I C D T A L S R W D V A E V L A V H R Y G E L
UniRef90_W7ZKG4         R L E Y H A Y E S M A I K L K K I S Q E V Q D N W P G T N V A I T H R L G M L
UniRef90_UPI0003491940  Y L E Y Q A Y Q P M A I A I F N S I A A E I R R Q W D V N R I V I H H R V G R L
UniRef90_UPI00047E5804  Y L K Y D A Y V P M A E K K L A Q I G D E I I Q K F P D A K V S I V H R I G E L
UniRef90_S2XD74         Y L E Y E A Y V P M A E N K L K Q I G D E I A E R W P G T I T A I G H R I G A L
UniRef90_UPI000255BB2E  S L E L E H Y P G M A E A A L T D I A R Q A A Q W P L G R V R I I H R F G P L
UniRef90_D3BU88         K L E Y E A Y T P M A V K E I A K I C S H L F T T Y N I L H I A V L H R I G T V
UniRef90_E2BHL1         K L E Y E A Y E G M A I K E M N N I C T K I R L Q W N V E G I A I Y H R I G E V
UniRef90_K4C981         E L Q Y E A Y V P M A V R C L K S L C S S A R S S W D I H S I A V A H C L G T V
UniRef90_E0MLB6         G E E L E H Y P G M A E S Q I E A A A N R A A E R F T V D A L L V I H R Y G K I
UniRef90_UPI00037C957B  A M T L E H Y P G M T E R V L E L A Q A V A A R F A L D G V L V I H R V G R L
UniRef90_F5LAH6         Y L E Y E A Y V S M A E K Q L F K I G Q E I A E R W P E A R V A I S H R I G R L
UniRef90_A0A053P8R5     K L Y Y E A Y P A M V H R T L M D I I E E C E R Q A D G V R V A V A H R T G E L
UniRef90_UPI0003643C1B  T L E L E H Y P G A T E A A L L H L A E A V Q R W S L S A A T I I H R V G P M
UniRef90_W7DKC8         H L Y L E H F P G V T E Q E I E R I L Q Q A K E Y W P I E S A I V I H R V G R L
UniRef90_W0ADP9         G G L L E H Y P L M T D S A L N A L A A E A T E R W S L S G V V L V H R V G P M
UniRef90_K2Q3T3         A G E L E H Y P G M A E T E M T R I A E L A I D R F S L L G L T A I H R F G R I
UniRef90_K1PNA0         R L E Y E A Y K P M A K K K M K E I C D S I R K Q W E I H N I A M I H R I N V V
UniRef90_A1ZKS9         S L E F E A Y E A M A M N K M R E I C A R Q K Q W K T D K I A I Y H R V G K L
UniRef90_F1L0I8         H L E Y E A Y N E M A Y K E M R K I C A E V H H K F P V H R V A I I H R I G V V
UniRef90_UPI00037AE9AA  A L T L E H Y P G M A E K A L E A L E A E A R G R W A L E G C R I L H R F G R L
UniRef90_UPI0004656B1A  A L E L E H Y P G M A E A E I A R V A E A A L A R W P L S A L T V I H R H G R I
UniRef90_UPI00036A90DE  A L E L E H Y P G M T E R E L E K I L H L A E A V Q R W S I L R Y A I I H R K G T L
UniRef90_UPI0003610F8A  H L E Y E A Y V P M A L S E M R R I G R E I G E H W P G T L C A I H H R I G S V
UniRef90_F5Z492         G I E L E H Y P G M T E Q A L T N L V Q E A I T R F S L T S A G A V H R V G R L
UniRef90_U9VU10         A L E Y Q A Y E P M A V V F K Q I A A E I R N K W D V T H I V I H H R T G K L
UniRef90_A6X251         A L E Y E A Y P E M A V Q M E Q I G R E I A E R W P I T A L T I I H R Y G L L
UniRef90_B4W8S0         A L T L D H Y P G M T E R S M R D I A E A A A A R F Q I E D L I V A H R C G E I
```

```
                              90        100       110       120
UniRef90_UPI00036CEF71  L P G D P I V V V I A A A S H R H A A F E G A S F V M D F L K T D A P F W K K E
UniRef90_V6M3G1         Q I E E I A V I V A V A T P H R N E S F E A G R Y A I E R L K Q I V P I W K K E
UniRef90_UPI000346D9E8  R V G E A V S V L V A V G C P H R S E A F E A C R Y A I D T L K H N A P I W K K E
UniRef90_UPI00036962A5  F I G E Q I V F V G V T S K H R Q D A Y A A N E F I M D Y L K V K A P F W K K E
UniRef90_B6INV1         E P G D R I V L V A C A S A H R D A A F A A C Q F L M D W L K T R A P F W K R E
UniRef90_UPI0003721709  R I G E M A V L I G V S T P H R A D A F E A T R Y L I D T I K Q T V P I W K K E
UniRef90_G9QM53         D L S D I A V A I A V S T P H R K D A Y E A N R Y A I E R I K E M V P I W K K E
UniRef90_B9JCT8         S P G E N I V L V I A A A S H R Q A A F D G A N F V M D F L K T S A P F W K K E
UniRef90_B3QIH5         V P G D N I V L V L A A S A H R Q A A F A A A E F L M D Y L K A N A P F W K R E
UniRef90_K2LGK4         L P G E R I V L V L V L S A H R R A A F E A C D F I M D F L K T R A P F W K R E
UniRef90_S9S7P5         A L G N P V V L V A V A A P H R A S A F C A C E F L M D F L K T H A P F W K K E
UniRef90_UPI00046F9ED7  E V G Q Q I V F V G A C A A H R G T A L S A T S F L I D R L K T G A P F W K K E
UniRef90_A0A024K7C4     R P G E P I V Q V M A L A P H R E A A F K G A E Y L M D Y L K T D A P F W K K E
UniRef90_W4Q1U5         D I S E I A V I I A V S T P H R K A A Y E A N E Y A M E R I K Q I V P I W K K E
UniRef90_W4AM51         G I G E T S V V I A V S P H R A S C Y D A S R Y A I E Q L K R S V P I W K K E
UniRef90_G2I4Q7         K V G A P I V L V L C A S A H R A A A L E A T E F M M D W L K T H A P F W K R E
UniRef90_L0MGN2         P A G E E I V L V G V S S G H R E S A F L A A E F I M D L L K T R A P F W K R E
UniRef90_L0NCP1         A P G E N I V L V I A A A P H R Q A A F D G A S L M M D Y L K T S A P F W K K E
UniRef90_UPI00026250AA  Q P Q D N I V L V A V W S R H R A A A F D A C R F L I D V L K T S A P F W K K E
UniRef90_UPI00036DB1F1  T P G A G L V L V L V A S A H R R A A F A A C E Y L M D F L K T E A P F W K K E
UniRef90_W8BLF6         P P K E A S V V I A I S S P H R Q S S L D A V S Y A I E H L K Q K V P I W K K E
UniRef90_E1VQD9         V V G D Q I V F V G V A G R H R R E A F D A C A F I M D Y L K T E A P F W K K E
UniRef90_UPI000380EBB2  Q P F D P I V F V A T A S A H R R A A F E A A D F L M D Y L K T E A V F W K K E
UniRef90_UPI0003A3385D  K A G E Q I V F V A T A S K H R R A A F E A A E F L M D Y L K S D A P F W K K E
UniRef90_F8FF45         P I G E I S V V I A V S S P H R D A S Y D A S R Y A I E R L K Q I V P I W K K E
UniRef90_K9W8W0         Q I G E I S V I V A V G C P H R S E A F A A C K Y A I D T L K H N A P I W K K E
UniRef90_X5XLU1         A P G E N I V L V A A S S H R Q A A F E A A N F L M D F L K S R A P F W K K E
UniRef90_Z5XMB0         S L T D Q I V L V A V S V H R E A A F E A A Q Y L I D L L K A R A P F W K K E
UniRef90_E3I0L7         L P G E V I V F V G V A A R H R A D A F A A C E F L I D R L K T D A P F W K F E
UniRef90_B7JYI4         N I G E I S V L V A V G C P H R G E A F A A C R Y A I D T L K H N A P I W K K E
UniRef90_H5SFU7         E I G E S S V I I V V T S A H R R P A F E A C Q Y A I D R L K K I V P I W K R E
UniRef90_UPI00035FF6B1  K P G E T I V L V V T A S H R H A A F E S A E F I M D F L K T H A P F W K K E
UniRef90_N0B9Z4         K P G D N I V L V I A C A S H R Q N A F A A E F L M D Y L K T R A P F W K K E
UniRef90_W9R915         L V G E T S V F I A A S S V H R V D A L E A C K F V I D E V K A S V P I W K K E
UniRef90_UPI0002F06FB2  R P G E N I V L V V T A S A H R Q T A F E A A S F L M D Y L K T R A P F W K K E
UniRef90_K9CLC6         L P G E R I V F V G T A S H R A A A L E S C A F L I D W L K S R A P F W K K A
UniRef90_Q2SWH6         R P L D Q I V F V A T V S A H R G D A F Q S C E F V M D Y L K T Q A P F W K K E
UniRef90_UPI00036AC805  A I G D I A V I I A V S S H R A A A F A G C E Q V I D E L K K H V P I W K K E
UniRef90_X0XNQ4         E I G E T S L V V V V S S P H R R E A F D A C Q H A V D R I K E V A P I W K K E
UniRef90_Q1NE24         E P G A R I V F V G T A S R H R T A A L E S C A F L I D W L K S H A P F W K K E
UniRef90_C7JGM9         E V G A P I V L V G T A A A H R G A A L S A T S F L I D R L K T G A P F W K K E
UniRef90_UPI000360B2E9  T P G E G I V L V A A A S A H R Q A A L E A T A F L I D W L K T K A P F W K H E
UniRef90_F9L530         Q I S D I A V L I A V S S P H R K D A Y Q A N E Y A I E R I K E I V P I W K K E
UniRef90_A0YQB6         Q V G E I S V L V A V G C P H R R E A F E A C Q Y A I D T L K H N A P I W K K E
UniRef90_A0A023CTD2     D I G E A A V V I A V S S P H R N D A Y E A N R Y A I E R I K Q I V P I W K K E
UniRef90_UPI000405794B  D V A E I S V V I A V S S P H R S D C Y D A S R Y A I E R L K Q N V P I W K K E
UniRef90_A9I047         Q R N A Q I V F V A A A S A H R G D A F R G C E Y M I D A L K T R A P F W K R E
UniRef90_J2VFN0         K P G E N I V L L A A S I H R E A A F N A A S F L M D Y L K N T A P F W K K E
UniRef90_A9CJG6         A T G E N I V L I A A S A H R Q A A F D G A S F V M D Y L K T S A P F W K K E
UniRef90_B2ICS1         T P G E P I V L V A A T G L H R A E A F E A T N F L M D F L K T E A P F W K K Q
UniRef90_UPI00016D95D3  P V K E A S V V I A I S S P H R E A A L E A V R W A I D E L K K S V P V W K K E
UniRef90_UPI0003789D4D  A V N E N I V L V L T A S E H R K A A Y Q A N E F I M D Y L K T H A P F W K K E
UniRef90_UPI0003826497  L I G D E I V F V G V A S A H R Q A A F A A S Q F I M D K L K T Q A P F W K K E
UniRef90_G3VIP1         P V T E A S V V I A L S S A H R A A S L E A V K Y V I D T L K A K V P I W K K E
UniRef90_J5NGL2         Q T G D E I V F V G V S S A H R G E A Y Q A N E F I M D F L K S K A P F W K K E
UniRef90_L7U5W9         V P G E L A V V I A T A S P H R R E A F R G C E Y T I E R L K Q D V P I W K K E
UniRef90_UPI00040FE9FF  K I G D I P V I I A V S A P H R K A A F Q A C E Y A I D T L K E T V P I W K K E
UniRef90_Q67JI8         E I G E A S V V I A V A T P H R A D A F E A C R H A I E R L K Q I V P I W K K E
UniRef90_A3IN57         E I G E I S V L I A V G C P H R A E A F A A C R Y G I D T L K H N A P I W K K E
UniRef90_UPI000374CD84  N I G D I S V L V A V G C P H R G E A F S A C G Y G I D T L K H N A P I W K K E
UniRef90_UPI0004747656  D I S D I A V V I A V S S P H R K I A Y E A N E F A I N R I K Q I V P I W K K E
UniRef90_X4Z2R7         P R E D Q I V F V A A A S A H R G D A F A A C E F M I D A L K T R A P F W K K E
UniRef90_S5YY36         A V G A P I M M V A T A A R H R V A A F E G A E Y L M D W L K S R A P F W K K E
UniRef90_S3IK45         A A R E N I V L V I A A A P H R Q A A F D G A N F V M D Y L K T A A P F W K K E
UniRef90_UPI0002FAFC03  H L K D Q I V F V A V A S A H R G Q A F L A C E Y V I D A L K T R A P F W K R E
UniRef90_W7ZKG4         E I S E A A I V I A I S S P H R E A A Y Q A N A Y A M E R I K E M V P I W K K E
UniRef90_UPI0003491940  K I G E I S V I V A V G C P H R G E A F A A C R Y A I D T L K H N A P I W K K E
UniRef90_UPI00047E5804  A I S D V A V V I A V S T P H R G D S F D G C R Y A I E R I K E I V P I W K K E
UniRef90_S2XD74         E I S D I A V C I S V S S P H R K D A Y Q A N E V A I E R I K E M V P I W K K E
UniRef90_UPI000255BB2E  A A G D E I V F V G A T S A H R Q A D A C A F I M D F L K S R A P F W K K E
UniRef90_D3BU88         P I G E A S I L I A I S S A H R H D S L T A V Q Y A I D T I K A T V P I W K K E
UniRef90_E2BHL1         P I S K A S V V I A I S S P H R E E S L K A V E Y A I N T L K A I V P I W K K E
UniRef90_K4C981         P V G E T S V F V A I S S V H R A D A L D A C K F L I D E L K A S V P I W K K E
UniRef90_E0MLB6         A P G E R I V F V C A T S R H R D A F A A C R Y V M D Y L K T R A P F W K K E
UniRef90_UPI00037C957B  L P G E Q I V F V A T A P H R H A A L Q A V D C L M D H L K S V A P F W K C E
UniRef90_F5LAH6         E I S D I A V V I A V S T P H R A D A Y E A S R Y A I E R I K E I V P I W K K E
UniRef90_A0A053P8R5     R I G D A A V V I G A S A P H R A A A F D A A R M C I E R L K Q D V P I W K K E
UniRef90_UPI0003643C1B  K P G E R I V F T G A S A H R A A A L E A C A F L I D R L K T D A P F W K R E
UniRef90_W7DKC8         N I G E S I V L V M A A S H R K A A F E A S Q F I M D Y L K T E A P F W K R E
UniRef90_W0ADP9         R P G D R I V F V G T A A P H R G A A L E A C A Y L I D R L K T D A P F W K K E
UniRef90_K2Q3T3         E A G E Q I V L V I A A A P H R Q A A F D G A N F V M D F L K T S A P F W K K E
UniRef90_K1PNA0         P I S E A S V I I A I S S P H R K E S L Q A V E Y A I D T L K A T V P I W K K E
UniRef90_A1ZKS9         S V E E T A V V I A V S T P H R K E S F Q A C E Y L I D T L K Q V V P I W K K E
UniRef90_F1L0I8         K V G E A S V A I A T S A P H R T E A I R A T E L A L D E L K R R V P I W K K E
UniRef90_UPI00037AE9AA  E P G A R I V M V A T A S P H R G D A F A A A A F L M D R L K T D A P F W K R E
UniRef90_UPI0004656B1A  L P G E R I V L V I T A A R H R G D A F A A E F L M D Y L K T A A P F W K K E
UniRef90_UPI00036A90DE  Q I G E M A V L I G V A T A H R D A F D A C R Y I I D T L K K T V P I W K K E
UniRef90_UPI0003610F8A  A V G E A S V V I A V S S P H R A Q S Y E A S R Y A I E R L K Q T V P I W K K E
UniRef90_F5Z492         Y N D E Q I V W V G T A A P H R A A A F E G A N F L M D M L K Q S V P I W K K E
UniRef90_U9VU10         T V G E I S V L V A I G C P H R S E A F A A C K Y A I D T L K H N A P I W K K E
UniRef90_A6X251         K P G E N I V L V I A A R H R H A A N E F A I D Y M K T D A P F W K K E
UniRef90_B4W8S0         T P G E T I V F V A T A S P H R R T A F E A A D Y L M D R L K T E A A F W K R E
```

```
                                            130              140
UniRef90_UPI00036CEF71   H L K D G G E W V S A R E Q D D H A R D R W
UniRef90_V6M3G1          M W E D G S E W K G H Q Q
UniRef90_UPI000346D9E8   R W A D G S T W V S I G A C D R A D
UniRef90_UPI00036962A5   R I T D S G E W L D A K D S D T D K A D L W
UniRef90_B6INV1          E T V E G G R W V E A R A E D E A A A R K W
UniRef90_UPI0003721709   V F S D G E V W V N A
UniRef90_G9QM53          H W E D G E E W I G N Q Q
UniRef90_B9JCT8          H A K D G T E W V S A K D A D D A A R E K W
UniRef90_B3QIH5          E R S D G S R W V E A H S R D D A A L A R W
UniRef90_K2LGK4          E T P D G D K W V T A K A S D D A D A D R W
UniRef90_S9S7P5          I Q R S G E W V E T K I S D E Q A M K R W
UniRef90_UPI00046F9ED7   E Y A G G S T W V Q A R A E D D A A A S A W
UniRef90_A0A024K7C4      E T P T G S R W V D A K S A D D D A K A R W
UniRef90_W4Q1U5          F W E D G T K W I G D Q
UniRef90_W4AM51          I W D D G S E W K G P Q
UniRef90_G2I4Q7          E F A D G S A W V E P R A C D D A A T T R W
UniRef90_L0MGN2          A T A Q G D R W V A T R E K D R L A A E R W
UniRef90_L0NCP1          H K A D G T A W V S A K D A D D R A R E K W
UniRef90_UPI00026250AA   I T P Q G S R W V
UniRef90_UPI00036DB1F1   E F A D G S H W V A A K S S D D A A R E R W
UniRef90_W8BLF6          L Y S D G S D W K E N K E C
UniRef90_E1VQD9          L S A E Q G H W V D A K E S D Q Q A R E R W
UniRef90_UPI000380EBB2   L T P T G S R W I E P R Q Q D Y T D S A R W
UniRef90_UPI0003A3385D   H L E N G S G W V K A K A S D E D M K K R W
UniRef90_F8FF45          I W E D G S E W K G H Q Q
UniRef90_K9W8W0          H W A D G S T W V S I G A C E Q V D
UniRef90_X5XLU1          H R V D G T D W V E A K D A D D Q A A A R W
UniRef90_Z5XMB0          H V E E Q T R W V S A N H K D Q I A A A Q W
UniRef90_E3I0L7          E R R E G G R W V D A H Q T D D V R A E R W
UniRef90_B7JYI4          H W K D G S T W V
UniRef90_H5SFU7          Y F E D G S V W V D G
UniRef90_UPI00035FF6B1   H T A A G A V W V S A K S S D D D A E E R W
UniRef90_N0B9Z4          V L A S G E R W V D A R E S D D M A A A A W
UniRef90_W9R915          V Y S D G E V W K E N S E F S E R R L D
UniRef90_UPI0002F06FB2   H L A D G T S W V A P R Q E D D E A T T R W
UniRef90_K9CLC6          H Y A D G A A W V A P R A E D E A K A Q D W
UniRef90_Q2SWH6          N T P A G E R W V
UniRef90_UPI00036AC805   F L E D G S Y W V G A R
UniRef90_X0XNQ4          V W E G G E A W I E G
UniRef90_Q1NE24          H F E G G T E W V E A R A E D E A K A K E W
UniRef90_C7JGM9          E F A N G T A W V D A R E E D E H A A A A W
UniRef90_UPI000360B2E9   E F A E G G Q W V E A R A E D D R A A S R W
UniRef90_F9L530          I W E D G E E W Q G H Q K G T H Q E A K R
UniRef90_A0YQB6          H W V D G S S W V S I G A C
UniRef90_A0A023CTD2      H W E D G T E W V G N Q
UniRef90_UPI000405794B   I W E D G S E W K G H Q
UniRef90_A9I047          T L Q G G S F W V E Q R A A D H E R T Q A W
UniRef90_J2VFN0          H L I T G E E W V E A K S K D Q E A F K R W
UniRef90_A9CJG6          H G R D G T T W V A A K A T D D T A R D K W
UniRef90_B2ICS1          H L V D G A G W V S A K Q E D E A A A Q K W
UniRef90_UPI00016D95D3   Q Y A E G S E W K E N K E C T W S K A
UniRef90_UPI0003789D4D   H F V D G S H W V E M K Q S D L E H T A C W
UniRef90_UPI0003826497   E T E T G N H W V E A R E S D I K A A D N W
UniRef90_G3VIP1          I Y E E S S W K R N K E C
UniRef90_J5NGL2
UniRef90_L7U5W9          F F E D G E V W V G
UniRef90_UPI00040FE9FF   F F T D G E V W V N A H
UniRef90_Q67JI8          V W E D G E A W V G S Q
UniRef90_A3IN57          F W A D G S T W V G A C E E D E
UniRef90_UPI000374CD84   H F E D G S S W V
UniRef90_UPI0004747656   H W E D G T E W I G N Q
UniRef90_X4Z2R7          T L A D G N R W V Q Q R V E D D T R T H A W
UniRef90_S5YY36          I T L E G G E W V A A T D K D E S A L D R W
UniRef90_S3IK45          H G K D G S A W V T T K D A D D A A R D K W
UniRef90_UPI0002FAFC03   T L A G G D R W V Q Q R E A D A E K T E Q W
UniRef90_W7ZKG4          H W D D G S K W I G D Q
UniRef90_UPI0003491940   W F E D G S T W V S I G A C E Q D D
UniRef90_UPI00047E5804   H W E D G T K W I G D Q
UniRef90_S2XD74          I W E D G A E W Q G H Q K G Y H E D A
UniRef90_UPI000255BB2E   F G A D K G D W V Q A R N S D E D L K K W
UniRef90_D3BU88          Y Y T D G S V W K D N C E S C H
UniRef90_E2BHL1          V Y E T G E E W K Q N K E C T W K
UniRef90_K4C981          V Y T N G E V W K E N K E
UniRef90_E0MLB6          H R V D G G E W V D A K D A D N S A K A R W
UniRef90_UPI00037C957B   E Y G A A R H W V D A R D S D Q A A L A R W
UniRef90_F5LAH6          F W E D G E A W I G D Q
UniRef90_A0A053P8R5      F A L D G V E W V A N R
UniRef90_UPI0003643C1B   V V A G Q G R W V E A R D S D D D A A N R W
UniRef90_W7DKC8          F F Q N E S R W V K A K E S D I E Q K K R W
UniRef90_W0ADP9          S Y A D G R Q W V E Q R C T D L D S A S R W
UniRef90_K2Q3T3          H S Q D G S S W V A A K D A D D T A R D R W
UniRef90_K1PNA0          I Y A D E S S W K E N K E C S W
UniRef90_A1ZKS9          I Y E D G E I W V A A H
UniRef90_F1L0I8          V Y A D G T S W K E N K E C
UniRef90_UPI00037AE9AA   E G P Q G A R W I G A R E S D A Q A R A R W
UniRef90_UPI0004656B1A   H R A D G S V W V E A K A K D D A A A E R W
UniRef90_UPI00036A90DE   V F T N G E E W V N A H
UniRef90_UPI0003610F8A   V Y E D G S E W K G H Q
UniRef90_F5Z492          F T R D D S R W V D V K S S D D K A A L A W
UniRef90_U9VU10          I W H D G S T W V S I G A C E D D
UniRef90_A6X251          H L A D G S T W V S S K E D E K I R E R W
UniRef90_B4W8S0          T G P A G A R W I E P V D E D R A A L A R W
```

```
                    1         10            20            30            40
UniRef90_L0W9I7              H I E I C E R P L A S A A P A S W L H D A G L S G A Q V Q F C G Q V R V Q
UniRef90_D1C1R8              F R V V Q E P I D P D E V T A A V A A P D A G A I V T F Q G T V R R V L
UniRef90_E0IBW0             R Y Q L T D Q T I A V E E I T R L V I T P N N G A T L S F V G T T R T V
UniRef90_D5BW54         M T V H I I N A P F D P W Q E V A N L K R A G R F G A T A C F I G T M R V Q
UniRef90_UPI000465CD5E         V R I Q A E D F D I A A E Q A A L R G R A D I G A L V S F T G L C R D D
UniRef90_B7IRL0        Q V L F E I V D N P I L V E E V T N K V A R R E V G A I T T F I G T V R T L
UniRef90_B9E9E6        Q F E V V T M P I D V E Y Y R K M T V T P H Q G A V C V F T G I V R T E
UniRef90_UPI00046EEDBB        F A I T Y D P I D A D E V A S K V H D P S H G A S L T F N G T T R T V
UniRef90_UPI00035D07AE      M Q V R V Q E A V F D P G T E L A G F A G R R D I G A V V S F T G V V R D T
UniRef90_F7VDF6          I R V L V Q T D A F D L G G E M A R L S H S D S V G G I S V F M G Q V R L E
UniRef90_V7BJH4                P V D V A K Y M N F V S A P Q A G A I A T F A G T T R D T
UniRef90_M4S7M4            I R V Q I E R F D P G E E L A R L E A L G G G G V A S F T G I V R G E
UniRef90_A6UPN4            I R V S N E D F N I D I E T K A L L E K P N I G G I V N F V G V V R A E
UniRef90_G8PGG6            V R V Q A A D F D V L A E T E I L T K R K D V G A I V T F T G L C R D E
UniRef90_A0A059DMS2        I R I T D H P F Q I A D A V A E F R Q S A G A V T F S G L V R V Q
UniRef90_F6ZA98           I V F T N D A L N V Q A A V D K V S S E T C G A V S I F L G T T R V L
UniRef90_W7YV11             S I T E E P L S I E E V T S K V L H S N H G A T L S F I G T T R T V
UniRef90_UPI00026273EB       K F W I T Q E P I N P N D C I E K V A R H E A G A V N T F I G T V R T L
UniRef90_W3RMR6        V T I R L Q P G N F D V A A E I A A L R G R H D I G A V V N F I G V C R I T
UniRef90_D6WT96           K F T E D K L S V E A L T D L V A S P K C G A V S V F M G T T R V L
UniRef90_UPI0003C272D3  K D F I K L T Q E K L S V D E A S V L V T S P C C G A I S L F I G T T R V I
UniRef90_M7YEX4           S I G I Q A E P F D T A A E I A R I G A E G R A G A V V T F T G L C R D E
UniRef90_G6DDK0         D Y L K L T S D K L S V E A V S E M V V D D K C G A V S L F V G T T R V L
UniRef90_I7RDU3                               T F T G K V R V S
UniRef90_UPI0003C3666A  K N H L L L T H E K L D V G A I N N L V T A G S C G A I S L F V G T T R V V
UniRef90_D7N130        Q T L I R I Q T A D F D L Q E E Y R G L L A R S N T G A V A A F V G L V R D R
UniRef90_V7EH81            M R V A V Q E A P F D L G A V S R D F A A G A T G A G A V V F T G V V R G D
UniRef90_UPI00036E2815 E D S F A I S L A P L S V E K A Y Q L A S D P A N G A V V V M S G T V R V V
UniRef90_A4EZF1          M H V K V Q E E R F E F G R E A E A F A A G C A G A G V V T F T G V R D V
UniRef90_I0YMQ6          M F V E V L P D P L E L N K Y V G F V E D N G S G A I A T F M G V T R V L
UniRef90_B8GPA4         M G V S L H P E P F D P W A R L A A H Q A A G S F G A T A V F V G T M R V R
UniRef90_C1D9S3          I T V R V G P D D F D A G A E Q Q R L H A P G V G A V A S F T G L V R V V
UniRef90_G0HL09         M K V R L T E E P F D L N T A L R Y L L V P E A G G Y V F F L G K V R V R
UniRef90_D8TY36        N V F V E I T E N D L D I C K C M E L V A D P G A G A I S T F N G V T R V I
UniRef90_F7Z0P3            F E I V K E P V D V S K L I Q A V A D R N A G A I V T F I G T V R T L
UniRef90_UPI00040E9CCC     F K I V K E P I E I Q H V I D Q V V D P N C G A I S T F I G T V R T L
UniRef90_Q297G3          H I K L I D C P I D V T Y A I N L I S D P S C G A S S I F I G T V R T V
UniRef90_UPI0003477176 S N G L F E I T S E P L S I E G I V E K V V H P H A G A I N T F I G T V R T L
UniRef90_F4HLR7        K V R I V K K P E D F N L Q E A V S M I S S P S T G G I V M F L G K V R V K
UniRef90_UPI00040714C7 A P V I V R V Q R E D F D L D A E V S A L R E R S D I G A V V T F S G L C R D E
UniRef90_Q2JJL9        K T S F Q I T L A P L S I D R V H Q E A Y H P G N G A V V V M S G T V R V D
UniRef90_B8ESR6           V R V E A A A F D V G R E M A L L T Q R T D V G A V V A F T G L C R D E
UniRef90_L0EHU3        D G R F I L T Y K P L D A D R M L S Q V I V P E H G A S L V F V G T R R T V
UniRef90_W8F6J4          I H I D L T D Q P I D V S A A L R S V E A D A G A I N T F I G T V R V V
UniRef90_N0B609           F E I T K E P I S I E S I I H K V E K R T S G A I N T F I G T V R T L
UniRef90_G1KHA4                A D E I S A L V I S P C C G A V S L F I G T T R V I
UniRef90_B1Z562           V R V Q Y A A I D A G A E I A P I V R N P N G A V V N F L G V V R V I
UniRef90_K9VWR3            A I T F A P L S L E E V Y A L A D D Q A N G A V V V M S G M V R V V
UniRef90_UPI000477D0B4     F R L T Y E P L D V A E V Y R L A D T S A N G A V V L M S G M V R V D
UniRef90_UPI0004251347 K V M F D I V D E P I Q V G E L I E K V T R R E A G A I T T F L G T V R E W
UniRef90_C1BXY0           V E L T H D K L S V E A V S E L V T C P S C G A I S I F I G T T R V V
UniRef90_UPI0004774999     F K I V R D P I S V E E V T N Q V S R R E V G A I T L F I G T V R T L
UniRef90_F8EI23                     S D E A G G I V T F V G T V R V L
UniRef90_A0A059FGV2       I R V I D Q P F R I S D A I A E F A Q A A G A I V T F S G L V R V S
UniRef90_W4LVC8           K I T T E P I D V Q A V N D F V K R P S D G A V V T F D G I V R V R
UniRef90_B1XP86        H D Q F A I A F A P L S F D T V Y R L A E D P G S G A V V V M S G T V R V H
UniRef90_F5LC08        R Y I L T R D P I E P A E L L H K V T H P D C G A T L A F I G T V R T V
UniRef90_UPI000395DCAB        R I Q E D H L D I N Q L T Q A L T E S S E V G A I T F V G R V R V K
UniRef90_B7R3N6        M K V R I T R E A F S V D E A I K L V E T D E A G G Y V V F L G K V R V L
UniRef90_K9UJ27        D R F A I G F A P L S V D E V Y Y Q L A D N P G N G A V V V M S G T V R V D
UniRef90_A0A022R7M8        I E I L E E P I D I T K Y I N Y V Q S P H C G S G A I S T F A G T T R D T
UniRef90_X5L3Z5           K I K I T E N K L D I T E C L D L A K D L G S G G I A T F I G T V R D T
UniRef90_E0XSX7           K I T N K E I Q P H D L F E A V R A P K H G A I A T F A G T V R D T
UniRef90_A0A021X0H4                A G R R D T G A I V T F T G L C R D E
UniRef90_L8LNT2        A K D N L R I S F A P L S L T E A Y A L A E D G A N G A I V L M S G T V R V L
UniRef90_D4TD81        A E D S F A I T I A P L L P E E I Y T A A Q D L A N G A V V L M S G V V R V L
UniRef90_I7KDQ0          I S V T R D D F D V N A V I D R V R R P D M G A L V T F L G V V R D D
UniRef90_B9R289          V R V Q A E D F S A Q S E M D T L T A R Q D V G A L V S F T G L C R N E
UniRef90_UPI0003813B1E     F E I V E E P I S V E S L I E K V K D R N A G A I T T F I G T V R T V
UniRef90_K9Q2K6        A D D E F V I T I A P L S D E M Y R R S E D P A S G A V V V M S G T V R V K
UniRef90_UPI000367E031   I R I E V T E H A F N P W E L V A E F Q Q Q P Q S G A N V I F V G T M R V E
UniRef90_K9YJ69           S L K I S F A P L C V E E V Y Q L A D S P E N G A V V V M S G T V R V K
UniRef90_K9Z5B8        T D F K I T F A P L C L T E V Y Q L A D N P A N G A I A L M S G T V R V E
UniRef90_UPI0002260357 S R L V V V Q S E P F D M G A E A R L L A D P E T G G L G S F L G I V R L M
UniRef90_E6QJY9              P G E R L V A E A K H G A D G A V V F D G I V R N H
UniRef90_M7NDJ2          E I T D K P I D P Q R Y A D H V L R P E A G A V V T F T G H V R E W
UniRef90_B5ZX00          I R V Q R E D F D L Q A E V D R L S K N P G V G A I V T F S G L C R D D
UniRef90_D3TNE9        H L L L T H N S L D V G A I N L V G A N S C G A I S M F I G T V R V V
UniRef90_K9SV97       H T D F K I T G E P L D I S L A Y T A A D D P Q N G A V V L M S G M V R V T
UniRef90_G7IZR4        K D L I E I V E N S I D V A K Y M N F V S A P Q A G A I A T F S G T T R V L
UniRef90_R7QQ85        S D D T V K L V S V P L S V E E A S N V V S S P H A G G T S I F V G T T R D T
UniRef90_D0NGD0           V E V G F E P L D N Q R A V A L V T H P S A G A I S T F V G T T R V L
UniRef90_UPI000404D761 M N Y E I T R D K I D I D V I D K V I S R N A G A I T T F I G T V R T L
UniRef90_UPI00040580AA    F R V M E E P L S A D R I Q S L V A S P D A G A V N L F I G T V R T L
UniRef90_A3WDW5           I R L L E T P M D P G A E L E A L T A A P D A G G I A S F V G K V R V E
UniRef90_F4L6U9           I Q L K S T T L S P Q E C I D L A A H P G S G G S T V F I G T V R D E
UniRef90_UPI00047AEC39 Q I A I V R E S I D A A P L L A A A K H G A D G A V V V F D G I V R V H
UniRef90_UPI0003FDE184    F E I V R D P I N P A E V I A K V G G P D I G A I V P F I G T V R T L
UniRef90_UPI000263134A    I R V S V D P A P I A L G V E V A A L E E G A G A G V A T F V G T V R V E
UniRef90_E9C7U2        D D R I Q I T A D P L D V M M A M R F T Q D D S C G A I S L F V G T Y L R D E
UniRef90_A0Z1X1        M S V L V Q E T P F S V D Q Q Q S L F L A S S S G A I L A F V G T V R V E
UniRef90_UPI0003742221    S I R I Q Q E D P S Q E E V N A L R K S Q R I G G I T T F L G C A R V F
```

```
                              50          60          70        80
UniRef90_L0W9I7          A L H L E H Y P G M T E R V L R A I V A Q A G E K W P L N G A W V V H R I G T I
UniRef90_D1C1R8          Y L E Y D A Y P A A A E K T L A Q I G D E I R E R W G I D R V A I T H R L G R V
UniRef90_E0IBW0          R L E Y D C Y A P M A L R T M E Q I G E E I E A R W P G T L C A I A H R T G V V
UniRef90_D5BW54          A M E L E H Y P G M T E K Y L G K L T E E A R R Q W P I L D S L I I H R Y G H L
UniRef90_UPI000465CD5E   A L E L E H Y P G M A E S E I T R I A K T A I A R F G L L G L T A I H R Y G R I
UniRef90_B7IRL0          H L E Y E A Y K P M A V K Q L M R I G E E I S E R W P D A K V A I T H R V G R L
UniRef90_B9E9E6          Y L E Y A Y I P M A K K L E Q I G Q E I N E K W P G T I V S I A H R I G N L
UniRef90_UPI00046EEDBB   L L E Y E A Y V P M A M N T M K Q I G D E I A A R W P S T R T A I T H R L G T V
UniRef90_UPI00035D07AE   S G D L E H Y P G M T E R A I G K I V D E A V A R W S L A G A L V I H R F G T L
UniRef90_F7VDF6          S L T L E H Y P G M T E K V L I G L A E E A T A R F S L L G C T V I H R V G T M
UniRef90_V7BJH4          F E R Y E A Y V P M A I R C I N M I C S S A R S W N L H S I A V A H R L G T V
UniRef90_M4S7M4          G G L L E H H P G M T A Q A M A R I A V E A E R R W P I L G L T L I H R H G P L
UniRef90_A6UPN4          Y L E F E C Y D K M A E K K L E E L K N K A I E Q F G I I D A T L I H R I G K L
UniRef90_G8PGG6          G G E L E H Y P G M A E A Q I S K F A Q Q A V D R W P I T G L T I I H R F G K L
UniRef90_A0A059DMS2      T L H L Q A Y S P I T E N G I Q Q A V D A A Q E K W S L S A V R V I H R I G D M
UniRef90_F6ZA98          R L D Y E C Y G Q M A H K E L E K I C E R L R E K W P I L H I L I H H R L G S V
UniRef90_W7YV11          H L E Y E A Y I P M A L A Q L Q A I G K E L K E R W P D A L C A I S H R I G T V
UniRef90_UPI00026273EB   F L E Y Q S Y I P M A E K K L M Q I S E E I R E K W G D A D T A I V H R V G R L
UniRef90_W3RMR6          A L T L E H Y P G M A E E E I A R H V N E A L A R W P L T G V T V I H R F G R L
UniRef90_D6WT96          K L E Y E A Y E A M A L K C L E K V C G E I R A K W P V E N I A I Y H R L G V V
UniRef90_UPI0003C272D3   H L E Y E A Y T P M A E E I K K I C R D V R K K W P I K H V A V H H R L G L V
UniRef90_M7YEX4          A L E L E H Y P G M A E A E I Q R V A E E A I G R W P L Q A L R V I H R H G L V
UniRef90_G6DDK0          H L E Y E A Y E A M A I N A L K A I C N E V R E K W P V H G I A M Y H R L G S V
UniRef90_I7RDU3          A L T L E H Y P G M T E K A L T E I I A D A R S R W S L Q R V S V I H R V G P L
UniRef90_UPI0003C3666A   S L E Y E A Y P M A I K E M E S I C G Q L R Q N W D I V N I A I F H R L G L V
UniRef90_D7N130          D T D L E H Y L E V T E N E I A G I V R T A S Q R W P L E A C T V V H R V G E L
UniRef90_V7EH81          G M E I E H Y P G M T E K A I A A I A A Q A V D R W S L V D A L V I H R H G R L
UniRef90_UPI00036E2815   A L E Y Q A Y E P M A L R V F Y Q I A E E I R Q K W D V N R V V I H H R I G R L
UniRef90_A4EZF1          A M E I E H Y P G M T Q K A L E K I T A D A M A R W S L A D A L V I H R H G R L
UniRef90_I0YMQ6          S L S Y E A Y V P M A E K E M Q V I C R K A H D K W D L K K M A V A H R I G H V
UniRef90_B8GPA4          G M T L E H Y P G M T E K H L E G I V A E A R S R W P L D D C L I A H R V G P I
UniRef90_C1D9S3          A L E L E H Y P G M T E K S L H A I I A E A G Q R W P I L A A A T V I H R T G R M
UniRef90_G0HL09          K L V Y E A Y P E M A Q A E M E R I R N E A L E R F P I L D M L I W H R Y G E L
UniRef90_D8TY36          K L D Y E A Y V P M A L K K L Q E L A H E V G R R W N V C K V A V A H R K G I V
UniRef90_F7Z0P3          Y L E Y E A Y E P M A R K K L E Q I G T E I R Q Q F P E A K T A I V H R T G R L
UniRef90_UPI00040E9CCC   Y L E Y D A Y V P M A E K K L K R I G D E I K E K W P D S K V A I T H R I G R L
UniRef90_Q297G3          S L A Y E A Y E N M A L K E M D K I C S D L R A T W P L K H I L I Y H R L G T V
UniRef90_UPI0003477176   Y L A Y E A Y E P M A V K K L A Q I G D E I K K K W P E A R V A I T H R I G H H
UniRef90_F4HLR7          K L I Y E A Y E E M A L R E M E R I R E E A L K R F P I N D I V I W H R I G E L
UniRef90_UPI00040714C7   A G E L E H Y P G M A E A E I E R I C H E A L E R F G L Q A A T A I H R F G K I
UniRef90_Q2JJL9          Y L E Y Q A Y E P M A L K V F A D I A R Q I Q Q R W P D A N V V I H R Y G K L
UniRef90_B8ESR6          G G E I E H Y P G M A E D E I G R V V A K A L E R W P L Q G A L V I H R Y G R I
UniRef90_L0EHU3          H L E Y E A Y A P M A L K T M R Q I D D E I A A K W P G T R C A I A H R L G T V
UniRef90_W8F6J4          R L E Y E A Y D S M A L H Q L R K V A E Q A A E R W P V E K I T V V H R K G T L
UniRef90_N0B609          Y L E Y D A Y E S M A V K K L T Q I S T E I Q E Q W P G A I V A I S H R I G R L
UniRef90_G1KHA4          Q L D Y E A Y A P M A L K K I C A D I R L K W P V K H I A I H H R L G S V
UniRef90_B1Z562          A L D V E H Y P T M T E Q A L W S I V E E A G A R W Q L E A V R I V H R V G R I
UniRef90_K9VWR3          C L E Y Q A Y E P M V I N I F K Q I A T E I R S K W N I N R V V I H H R T G K L
UniRef90_UPI000477D0B4   H L D Y Q A Y E P M A L R I F A Q I T Q D I R R M Y P V S R V V I H H R L G K L
UniRef90_UPI0004251347   T K E Y Q A Y K P M A V K M L E Q I G K E I R K K W E N T E V A I T H R V G R L
UniRef90_C1BXY0          Q L E Y E A Y V P M A Q S E L K K I Y A D I R A R W P I R H I C V H H R L G V V
UniRef90_UPI0004774999   S L E Y Q A Y D S M A V K M L S Q I G K E I K N K W P D S W V A I T H R I G K L
UniRef90_F8EI23          R L E F E A Y A P M A I R E M Q K I A E E A M R R W P V L K I S I H H R V G V L
UniRef90_A0A059FGV2      T L H L Q A Y S P M T E N G I R D A V N R A K E Q W P L T A V Q V T H R I G N M
UniRef90_W4LVC8          S L E Y E A Y A E M A E K K M A D I G A E V R N K F A V G E I A M V H R L G A L
UniRef90_B1XP86          Y L E Y Q A Y E P M A I A I F Q Q I H D I R Q Q W P D T N V V I H H R I G K L
UniRef90_F5LC08          L L E Y E A Y A P M A V S V M E T I G A E M E A R W P G S R C A M T H R L G P V
UniRef90_UPI000395DCAB   E I Y L E S Y L S M T N K A M M E I T E E V Q L R W S V E K I S I V H R I G V I
UniRef90_B7R3N6          K L I Y E A Y E E M A L K E M E K I R K E A L E K F P I L D I L I W H R V G E L
UniRef90_K9UJ27          Y L E Y Q A Y E P M A M R V F A A I G R E I R T Q W P A T H V V I H H R V G K L
UniRef90_A0A022R7M8      F E R Y E A Y V P M A I R C I K S I C T S A R S S W N L S S I A V A H R L G P V
UniRef90_X5L3Z5          R L E Y E C Y Q S M A I K E V R K I I D K A I L S V R N V V V V H H R T G V L
UniRef90_E0XSX7          H L E Y E A Y P A M A E K I M E R I G E E A K S K W P I G K V A I L H R L G R L
UniRef90_A0A021X0H4      G G E L E H Y P G M A E A E I G R I C R E A V E R F A L L G I T T I H R V G K I
UniRef90_L8LNT2          F L E Y Q A Y E P M A L V V F S Q I A A A I R E R W T D T N V V I Q H R T G R L
UniRef90_D4TD81          A L E Y Q A Y E P M A L Q V F Y Q I A T H I R N Q W N V N R V V I H H R I G K L
UniRef90_I7KDQ0          G I E L E A Y E E I A T K E M E T I R D E A F A N Y P I E A V E I I H R I G R L
UniRef90_B9R289          A G E L E H Y P G M A E A E L E R I A S D A L K R W P L T G L T V V H R Y G K I
UniRef90_UPI0003813B1E   Y L E Y Q A Y K P M A E K M L A Q I G K E I N Q K W S D T K V A I T H R I G S L
UniRef90_K9Q2K6          Y L E Y Q A Y E P M A K V V F Q Q I A R Q I R S Q W P D V N V V I H H R V G K L
UniRef90_UPI000367E031   A M C L E H Y P A M T Q K Q L A D L V N A A L A R W S L N H V L L H R V G E L
UniRef90_K9YJ69          Y L E Y Q A Y E P M A I N I F R L I C D R I Y D Q W Q D T K I V I H H R I G K L
UniRef90_K9Z5B8          Y L E Y Q A Y E P M A V T I F K Q I G A N L V N Q Y P D I N I I I H H R V G K L
UniRef90_UPI0002260357   A L E L E H Y P G M C E Q T L T M L A E N A L Q R F S L V G C T I I H R V G R L
UniRef90_E6QJY9          T R D Y E A Y E P M A E R Q L K V L A E Q A V E R F G V R S V A I V H R L G R L
UniRef90_M7NDJ2          T K S Y E A Y V P M A E K K M A Q I G G E I E E K W E G T R V A I A H R I G E L
UniRef90_B5ZX00          G G E L E H Y P G M A E A A M T R I G E L A I E R F G L L G L T A I H R Y G K I
UniRef90_D3TNE9          S L E Y E A Y E P M A L K Q L G N I C D E I A E R W P D L N I A I Y H R L G L V
UniRef90_K9SV97          Y L D Y Q A Y E S M S L Q I F R Q I A Q D C Q I Q Y P I S R V V I H H R L G Q L
UniRef90_G7IZR4          E L I Y E A Y I P M A I R C I K S V C S S A R E S W N L H S I A V A H R L G T V
UniRef90_R7QQ85          S L E Y E A Y D A M A V K E M Q A V C R A T R L K W P V I K L A I F H R T G L V
UniRef90_D0NGD0          R L E Y E G Y T P M A V S E L R K I C V I I R E K W P V V G V A L F H R L G V V
UniRef90_UPI000404D761   H L F Y E S Y E P M A L K L E E I G R E I S R W P D A K T A I T H R I G R L
UniRef90_UPI00040580AA   S L T Y E A Y V P M A E K K L A Q I G M E I A E K W P G T K T A V H H R T G P L
UniRef90_A3WDW5          A L E L S H Y E P L T L P G M Q E L A A Q A E Q R F A L M G L T M I H R I G T M
UniRef90_F4L6U9          T K E F E A Y A P M A V S E M R K I A A E V E Q R W H A H H V I H R V G S L
UniRef90_UPI00047AEC39   H L D Y E A Y E P M A L R Q M N D L A A Q A R F G V R H V T I H R I G R L
UniRef90_UPI0003FDE184   Y L E Y E A Y E P M A V Q T M A D I A K E I K E R W P H T Q L A M T H R I G R L
UniRef90_UPI000263134A   A L E L E H Y P G M T E A A L C A L A E A A V A R W N L L G V S I V H R V G R M
UniRef90_E9C7U2          R L E Y E A Y P S M A E K E M R K I G R T L L Q P H S A T K V S L L H R I G L V
UniRef90_A0Z1X1          A L E L E Y E A Y P M A E R V L E E I G V A A V S R F D L R G W R I V H R Y G R I
UniRef90_UPI0003742221   S I E F E Q Y A G M A E K V M Q A L A N E A K A K F D I I D V R M V H R V T T V
```

```
                                        90          100         110         120
UniRef90_L0W9I7         T A G D D I V Q V A V S A S H R Q D A F Q A C A F I M D L L K T R A P F W K K E
UniRef90_D1C1R8         E I G E P S V V I A V A S P H R A E A F D A C R Y A I D R I K E I V P I W K K E
UniRef90_E0IBW0        E I A E I S V V I A V R D A C Y E A S R Y A I E R L K Q I V P I W K K E
UniRef90_D5BW54        Q P N E P I V L V V W S A H R A A A F K A C Y Y L V E E L K A N A P F W K K E
UniRef90_UPI000465CD5E S P G E N I V L V I A A A P H R Q A A F D G A A F V M D F L K T D A P F W K K E
UniRef90_B7IRL0        E I M D I A V V I A V S S P H R K V A Y E A N E Y A I E R I K R I V P I W K K E
UniRef90_B9E9E6        D V S E I A V V I C V S S P H R K D S Y A A N E Y A I E R I K E I V P I W K K E
UniRef90_UPI00046EEDBB R I G E T S V V I A V S A A H R D T C Y E A S R Y A I E Q L K Q I V P I W K K E
UniRef90_UPI00035D07AE P P G A P I M M V A T A A A H R A E A F A A A D F L M D Y L K S R A P F W K K E
UniRef90_F7VDF6        R V G E P I V F V G T A S G H R A E A L Q A T A F L I D R L K T G A P F W K C E
UniRef90_V7BJH4        P V G E T S V F I A V S S V H R A D A L E A C R F F I D E I K A K V P I W K K E
UniRef90_M4S7M4        A P G E R I V F V G T A A M H R G P A L E A S A F L I D W L K T A A P F W K R E
UniRef90_A6UPN4        S V G E N I V L I I C A K H R K E A F L A C E Y L I N N L K K E V P I W K K E
UniRef90_G8PGG6        P P G E N I V L V I A T S P H R R A A F E A A D F L M D F L K T Q A P F W K K E
UniRef90_A0A059DMS2    A P G D P I V F V A T A A P H R R A A F E A A D F L M D Y L K T E A I F W K K E
UniRef90_F6ZA98        P V K E S S V L I A I S S P H R V D A M A A T Q Y C I D N L K A K V P I W K K E
UniRef90_W7YV11        D I Q G I S V I I A V S T G H R D T C Y Q A S R F A I E Q L K N T V P I W K K E
UniRef90_UPI00026273EB D I T D I A V V I A V S T P H R A D A F E A S R Y A I E R I K E I V P I W K K E
UniRef90_W3RMR6        T P G E N I M M V L T T S A H R A A A F E A A D F L M D Y L K T A A P F W K S E
UniRef90_D6WT96        G V K E A S I V I A I A S P H R T E A L Q A T D W C I N K V K E S V P I W K K E
UniRef90_UPI0003C272D3 P V T E M S V I I A V S S P H R I E S L N A V S Y C I D T L K A T V P I W K K E
UniRef90_M7YEX4        R P G D G I V L V V T A S S H R V A A F E A A D F L M D Y L K T R A P F W K R E
UniRef90_G6DDK0        P C K E A S V V I A V S S P H R Q D S L S A V S Y C I D Q L K A T V P I W K K E
UniRef90_I7RDU3        F P G D E I V F V G V T S A H R S M A F E A A E F I M D Y L K T R A P F W K R E
UniRef90_UPI0003C3666A P V S E A S V V I A V S S P H R K T A L D A V S M A I E E L K K R V P I W K K E
UniRef90_D7N130        G P D E Q I V L V L A A A H R K A A F A A A E F I M D Y L K T E A P F W K K E
UniRef90_V7EH81        A V G E A I M M V A T A A P H R A D A F A A A E F L M D Y L K S R A P F W K K E
UniRef90_UPI00036E2815 Q I G E I S V L V A V G C P H R L E A F E A C R Y A I D T L K H Q A P I W K K E
UniRef90_A4EZF1        E P G E Q I M M V A T A A R H R V A A F E A A E F L M D Y L K S R A P F W K K E
UniRef90_I0YMQ6        G V G E P S V I I A V S S A H R R E A L E A C H W A I D E L K A T V P I W K K E
UniRef90_B8GPA4        E P G E P I V L T A V W S A H R K A A F E A C R Y L M E E L K H R A P F W K R E
UniRef90_C1D9S3        M L G D N I V L V A V A S A H R A A A F E A C I E F I M D W L K T G A P F W K R E
UniRef90_G0HL09        E V G Q D T I L I I A S G R H R K E A F E A C E W A I D E V K K R V P V W K R E
UniRef90_D8TY36        L V G E P S V I I A V S S A H R R E S L E A V Q W A I D E L K A V V P I W K K E
UniRef90_F7Z0P3        G I S D I A V A I A V S A P H R D E A Y R A N R Y A I E R I K E M V P I W K K E
UniRef90_UPI00040E9CCC E L T D V A V V I A V S T P H R A A A F E A S R Y A I E R I K E I V P I W K K E
UniRef90_Q297G3        P E N E A S V V I A A S A P H R S A A L K A V T F A I D Q L K S R V P I W K K E
UniRef90_UPI0003477176 D I S D I A V V I A V S T P H R A D S Y E A S R Y A I E R I K E I V P I W K K E
UniRef90_F4HLR7        D I G E N T I L V I A S G K H R K E A F D A C I W V V D E V K K R V P I W K K E
UniRef90_UPI00040714C7 T P G E N I V L V I A A S P H R Q A A F D G A N F I M D F L K T S A P F W K K E
UniRef90_Q2JJL9        R I G E I S V L V A V G T P H R A E G F A A C Q F A I D T L K H N A P I W K K E
UniRef90_B8ESR6        A P G E P I V L V I T L S R H R S A A F A A A E F L M D Y L K T A A P F W K K Q
UniRef90_L0EHU3        P I G E A S V V I A V S A P H R A G C Y E A S R Y A I E R L K Q I V P I W K K E
UniRef90_W8F6J4        H I G D V A V V V A L S T P H R A E S F A A C Q Y I I D T L K Q V V T I W K K E
UniRef90_N0B609        D I S D I A V V I A V S T P H R A Q S F N A C R Y A I E R I K E M V P I W K K E
UniRef90_G1KHA4        P I S E A S V M V A I S S P H R T E S L E A V Q Y C I N T L K A T V P I W K K E
UniRef90_B1Z562        P L G Q P V V I V V A A A H R A S A F D A C E F I M D F V K T H A P F W K K E
UniRef90_K9VWR3        K I G E I S V L I A V G S P H R A E A F E A C R Y A I D T L K H N A P I W K K E
UniRef90_UPI000477D0B4 R V G E I S V A I A V G S P H R A E A F D A C R Y A I D A L K Q N A P I W K K E
UniRef90_UPI0004251347 D L S E V A V A I V V S S P H R K A A Y E A N E Y A I E R I K Q I V P I W K K E
UniRef90_C1BXY0        P V T D A S V I I G I S S P H R R D S L E A V Q Y C I D K L K A T V P I W K K E
UniRef90_UPI0004774999 E I T D I A V V I A V S S P H R K T A Y E A N E Y A I E R I K Q I V P I W K K E
UniRef90_F8EI23        D L G E I P V I I A V A C A H R N T A F E A C Q F A I D T L K E T V P I W K K E
UniRef90_A0A059FGV2    S P G E A I V F V A V A S V H R A A F E A A D F L M D Y L K T E A V F W K K E
UniRef90_W4LVC8        G I G E S S I V I A V A A P H R H A A F E A C A Y A M D R V K E E V P I W K K E
UniRef90_B1XP86        E I G E I S V L V A A S C P H R A E A F A A C R Y G I D T I K H N A P I W K K E
UniRef90_F5LC08        G I G E S S L V I A V S T P H R A D C Y E A S R Y A I E R V K Q L L P I W K K E
UniRef90_UPI000395DCAB G L C E P I V F V G V S S K H R K D S F E A A S F I M D Q L K I S V P L W K K E
UniRef90_B7R3N6        E V G E D T I L I V A S G K H R G E A F D A C R W A I D E V K K R V P V W K K E
UniRef90_K9UJ27        K I G E I S V L V A V G C P H R G E A F A A C Q Y A I D T L K H Q A P I W K K E
UniRef90_A0A022R7M8    P V G E I S V F I A T S S V H R E D S L D A C K F M I D E V K A S V P I W K K E
UniRef90_X5L3Z5        F P G E E A V I V V S D G H R D A V F D A C R Y I I D T I K Q T V P I W K K E
UniRef90_E0XSX7        E L E E I S V L I A V G A G H R R E A M E A C L Y I I D K L K E I V P I W K K E
UniRef90_A0A021X0H4    A P G E N I V L V I A L A P H R H A A F N G A S F V M D Y L K T S A P F W K K E
UniRef90_L8LNT2        S I G E I S V L V A V G T P H R S E A F E A C R Y A I D T L K H N A P I W K K E
UniRef90_D4TD81        R V G E I S V L V A V G S P H R G E A F A A C Q Y A I D T L K H Q A P I W K K E
UniRef90_I7KDQ0        R V G E N I L L I V V G A G H R K E A F S A C E Y I L E R I K Q S V P I W K K E
UniRef90_B9R289        Q P G E Q I V L V V A A S A H R R A A F E A A D F L M D Y L K T R A P F W K K E
UniRef90_UPI0003813B1E D I S E I A V V I A V S S P H R K P A Y Q A N E Y A I E R I K Q I V P I W K K E
UniRef90_K9Q2K6        V I G E I S V L I A V S T P H R A E A F A A C K F G I D T L K H N A P I W K K E
UniRef90_UPI000367E031 R P S D P I V L V V W S A H R Q A S F E A C R E I M E T L K H Q A P F W K K E
UniRef90_K9YJ69        A I G D I S V L V A V G C P H R G E A F E A C R Y A I D T L K H N A P I W K K E
UniRef90_K9Z5B8        V I G D I S V L V A V G C P H R R E A F K A C Q Y A I D T L K H N A P I W K K E
UniRef90_UPI0002260357 V V G E P I V L V L A A A A H R G A A L D A T R F L I D R L K T G A P F W K A E
UniRef90_E6QJY9        G I G E S S V F I V V S S A H R G A F D A C R W V I D T L K K T V P I W K H E
UniRef90_M7NDJ2        D V G E V A V V I A V S S P H R K A A Y E A N E Y A I E R I K Q D V P I W K K E
UniRef90_B5ZX00        A V G E N I V L V A V A P H R Q A A F D G A N F V M D F L K T A A P F W K K E
UniRef90_D3TNE9        P V G Q A S V V I G I S S P H R Q V S L E S V A F A I D E L K K T V P I W K K E
UniRef90_K9SV97        K V G E I S V L I A V G S P H R A E A F N A C S Y A I N A L K Q N A P I W K K E
UniRef90_G7IZR4        P V G G T S V F I A V S S V H R A D A L E A C R Y L I D E I K A T V P I W K K E
UniRef90_R7QQ85        R V G E A S V I T A A S P H R R D A I D A C H F L I D E L K A T V P I W K K E
UniRef90_D0NGD0        E V A E A S V I V V V S S P H R R E A L E A C A F A I D T L K A T V P I W K C E
UniRef90_UPI000404D761 E I T D T A V V I A V S T P H R R D D A Y K A N R Y A I E R I K E I V P I W K K E
UniRef90_UPI00040580AA E I G E A A V I I G V A S A H R E A A I Q G S S Y A I E R I K E I V P I W K K E
UniRef90_A3WDW5        G P G D P I V L V G A A A R H R R D A I L A V D F C M D H L K S A A W F W K R E
UniRef90_F4L6U9        A I G E I A V I I A V A T P H R K A A F E A C Q Y A I D T L K E S V P I W K K E
UniRef90_UPI00047AEC39 I V G E I S V L V A V S S P H R A H Y E A S R W L I D T L K K T V P I W K K E
UniRef90_UPI0003FDE184 D I G D I A V V S V V A A P H R D V G F A A S A Y A I D R L K E I V P I W K K E
UniRef90_UPI000263134A T A G E R I V F V G T A A A H R R E A L D S C A Y L I D R L K T D A P F W K K E
UniRef90_E9C7U2        P V G E A S V I I A V S S P H R S N G I T A M R Y G I D E L K A T V P I W K K E
UniRef90_A0Z1X1        G Q Q D P I V W V G V F A D H R H E A F A G C Q F I M D T L K F I V P I W K K E
UniRef90_UPI0003742221 H A G D Q I V L I V V G A E H R K P A F E A C E W L I D T L K Q R V P I W K K E
```

```
UniRef90_L0W9I7          L I G G H W Q W V E A R E C D A E A A A A W
UniRef90_D1C1R8          A Y E G G E T W I G S E A A Y Q E
UniRef90_E0IBW0          I W E D G S E W K G H Q
UniRef90_D5BW54          T L A T G T R W V E S N T S S
UniRef90_UPI000465CD5E   H L K G G G D W V E A R A A D L S A R E D W
UniRef90_B7IRL0          F R E D G T M W V G D Q
UniRef90_B9E9E6          I W E D G E Q W I G G Q
UniRef90_UPI00046EEDBB   V W E D G S E W K G H Q
UniRef90_UPI00035D07AE   V T L S D A A W V A A K D A D E D A L N R W
UniRef90_F7VDF6          R F T D G T T W V E A R E
UniRef90_V7BJH4          V Y S N G E V W K E N S E F L E R R S E
UniRef90_M4S7M4          R F A D G E A W V E P R A G D A A A A A R W
UniRef90_A6UPN4          F S K D G S Y W V E Q H
UniRef90_G8PGG6          H L K D A S E W V E A K A A D D A D A A R W
UniRef90_A0A059DMS2      I T A S E S R W I E P R A E D Y R D R T R W
UniRef90_F6ZA98          V Y D D G T E W M E N N E C S W K
UniRef90_W7YV11          I W E D G S E W K G H Q
UniRef90_UPI00026273EB   H W E D G T K W I G D Q K E K T S Y K K R
UniRef90_W3RMR6          E R A S G A S W V E A R S E D D A A A A R W
UniRef90_D6WT96          I Y A E T E Q W K E N K E C
UniRef90_UPI0003C272D3   L Y E E E Y S W K E N K E C F W T N M E K
UniRef90_M7YEX4          H L A D G T T W V
UniRef90_G6DDK0          V Y _ D G S W K E N K E C
UniRef90_I7RDU3          A T V E G E R W V E S R D S D H I A A K R W
UniRef90_UPI0003C3666A   K Y E D E G S W K E N K E C Q W L S K E K
UniRef90_D7N130          T F S D G E R W V E A K Q S D K E A V E K W
UniRef90_V7EH81          I G P D G A A W V A A K D E D E A A L T R W
UniRef90_UPI00036E2815   Y W Q D G S S W V S I G A C E
UniRef90_A4EZF1          I L E N G S W V E A K E I D E E A L T R W
UniRef90_I0YMQ6          L Y E G G E V W K E N S E S
UniRef90_B8GPA4          T L K D G Q R W V E
UniRef90_C1D9S3          I R A D G A H W V D A K A S D D A A T A R W
UniRef90_G0HL09          V T D E G E F W I E G
UniRef90_D8TY36          F F E D G S I W K E N E E S
UniRef90_F7Z0P3          H W E N G E M W V G N Q K E
UniRef90_UPI00040E9CCC   H W E N G E M W I G D Q
UniRef90_Q297G3          I Y E G N A E W K E N S E S
UniRef90_UPI0003477176   H W E D G E T W V G D Q
UniRef90_F4HLR7          I T E E G E F W I E G
UniRef90_UPI00040714C7   H H V D G S E W V S A K D A D D A A R D R W
UniRef90_Q2JJL9          Y W R D G S A W V S L G A C E L S S A
UniRef90_B8ESR6          H R P D G G _ W V A A K A E D D S A T A R W
UniRef90_L0EHU3          I R E D G S E W I G E Q Q E S W
UniRef90_W8F6J4          F Y D D G D V W V A A H
UniRef90_N0B609          H W E D G E S W I G D Q
UniRef90_G1KHA4          V Y E D D S S W K E N K E C F W M K M E K
UniRef90_B1Z562          I R H D G S G W V E P K A H D D Q A M R R W
UniRef90_K9VWR3          W Y N E S S S W V S I A A C E T Q
UniRef90_UPI000477D0B4   Y W L D G S T W V N I G K C
UniRef90_UPI0004251347   H W E D G E T W I G D Q
UniRef90_C1BXY0          V Y E E E S C W K E N M E C
UniRef90_UPI0004774999   F W E D G T M W I G D Q L E K N Q Y A E
UniRef90_F8EI23          F F E D G E V W V A A H
UniRef90_A0A059FGV2      V T P S G V H W I E P R T E D Y H D R E R W
UniRef90_W4LVC8          F F D D G D H W V N Q N
UniRef90_B1XP86          F F A G G S E W V Q G C
UniRef90_F5LC08          I G E D G A E W K G
UniRef90_UPI000395DCAB   I E E Q G W V W V S A K P S D K Q A A L R W
UniRef90_B7R3N6          V T E E G T F W I E G
UniRef90_K9UJ27          W F S D G S T W V S I G D C E R H
UniRef90_A0A022R7M8      V Y S N G E V W K E N S E
UniRef90_X5L3Z5          I F E D G E V W V S A H
UniRef90_E0XSX7          Y G S D G E Y W V E G
UniRef90_A0A021X0H4      H F A D G R E W V D A K E S D D R A R D K W
UniRef90_L8LNT2          H W A D G S S W V S I G A C E
UniRef90_D4TD81          Y W H D G S V W V L N C
UniRef90_I7KDQ0          F G K D G E R W V
UniRef90_B9R289          H F V S G E T W V A A K A D D D A D A E R W
UniRef90_UPI0003813B1E   Q W E D G E A W I G D Q
UniRef90_K9Q2K6          F F S D G S E W V Q G C R A E A E
UniRef90_UPI000367E031   T L K D G T R W V E
UniRef90_K9YJ69          H F A D G T S W V S I G A C E E F A H K
UniRef90_K9Z5B8          H F A D G S S W V
UniRef90_UPI0002260357   E F A D G R R W V E S R Q E D E A I A A G W
UniRef90_E6QJY9          T F R D G A V W A D G
UniRef90_M7NDJ2          I W E T G E Q W I G D Q
UniRef90_B5ZX00          H S R D G A E
UniRef90_D3TNE9          V Y D N E S A W K A N K E C
UniRef90_K9SV97          Y W L D G S S W V
UniRef90_G7IZR4          V Y S N G E V W K E N T E F L E R R S E
UniRef90_R7QQ85          L Y D D G S A W K A N K E F Q H A R
UniRef90_D0NGD0          Q Y E G D T R W K E N V E W K D G A A A R
UniRef90_UPI000404D761   Y W D D G E E W I G N Q K E
UniRef90_UPI00040580AA   H W E D G S S W I G D Q
UniRef90_A3WDW5          K R G G E W H W I E P R I E D H A D L A R W
UniRef90_F4L6U9          I F E D G E V W V A A H
UniRef90_UPI00047AEC39   T F V D G V V W A D G E P F P E H I A M R
UniRef90_UPI0003FDE184   N W D D G S E W I G H Q K
UniRef90_UPI000263134A   W L A G G T R W V E P R A G D E E A A A V W
UniRef90_E9C7U2          V Y D D G T S W K A N C E C G W A
UniRef90_A0Z1X1          F M C D G R W V Q S K S E D A E R E Q A W
UniRef90_UPI0003742221   T T P D G D S W V
```

1   10   20   30   40

UniRef90_UPI0003B5B04B
UniRef90_G3MR74
UniRef90_M5P4Y8
UniRef90_G5BQX8
UniRef90_E0XXD4
UniRef90_P9WJR2
UniRef90_H3NTG7
UniRef90_UPI000299E157
UniRef90_U2ZM31
UniRef90_UPI0002DF3223
UniRef90_C1F3F4
UniRef90_UPI000466D05D
UniRef90_T0C8U5
UniRef90_Q1AT08
UniRef90_E3DYE8
UniRef90_B8HU18
UniRef90_UPI0002F1C030
UniRef90_A0A010PG16
UniRef90_W5L220
UniRef90_J0LFC4
UniRef90_UPI00036F5CCF
UniRef90_T0K6B3
UniRef90_B4KBH3
UniRef90_E6SJL1
UniRef90_UPI00041C9DC7
UniRef90_M7P2L3
UniRef90_K9Y891
UniRef90_UPI000288F18B
UniRef90_UPI00046F7A66
UniRef90_UPI00037C1C2F
UniRef90_I0I898
UniRef90_UPI0004061D19
UniRef90_UPI000346EC96
UniRef90_UPI00036BA215
UniRef90_S8DI52
UniRef90_Q97CL5
UniRef90_I0JKG7
UniRef90_B2ALQ5
UniRef90_J9HFF2
UniRef90_B8GHP4
UniRef90_A0A024PI14
UniRef90_L8MVX2
UniRef90_UPI00026CCE42
UniRef90_UPI00040AD55D
UniRef90_S0AN65
UniRef90_C5ZZS4
UniRef90_V5HSH8
UniRef90_S7VDP1
UniRef90_A9GF43
UniRef90_Q1GU00
UniRef90_A0B539
UniRef90_D8RBC2
UniRef90_F7B2K4
UniRef90_D9QIC1
UniRef90_L0HAU3
UniRef90_UPI000422D1C0
UniRef90_UPI0004714F97
UniRef90_T0F6W4
UniRef90_U4LB81
UniRef90_Q6L058
UniRef90_UPI0002F54C01
UniRef90_J7QEJ9
UniRef90_T0R6S9
UniRef90_M1ZDT1
UniRef90_T2MI49
UniRef90_UPI0003B4D363
UniRef90_H3ZL38
UniRef90_R9GWB3
UniRef90_UPI0004785498
UniRef90_O67928
UniRef90_H8KW28
UniRef90_K0C8P5
UniRef90_A9S6R9
UniRef90_A1CJM9
UniRef90_I8I6P7
UniRef90_UPI0003B6AE54
UniRef90_UPI0003738915
UniRef90_C1DT63
UniRef90_F0RQ19
UniRef90_F4QL23
UniRef90_U5DHZ0
UniRef90_UPI00036F4FD2
UniRef90_S3UIW9
UniRef90_UPI0003778CA6
UniRef90_C1FHS7
UniRef90_A4WWI4
UniRef90_E6QSW5
UniRef90_K2HFI8
UniRef90_UPI0002C2E0B7
UniRef90_D9V381
UniRef90_A6DT46
UniRef90_E8U2Z4

```
                                50        60        70        80
UniRef90_UPI0003B5B04B  G G E I E H Y P G M T E R L L A E Y G E R A A N R F G L S D W H I L H R H G T I
UniRef90_G3MR74         K L S Y E A Y A P M A K R E M L H C G A V R Q Q W H V K N I A L I H R L G E V
UniRef90_M5P4Y8         Y L E Y E A Y V P M A V N M L A Q I G E E I E E K W P G A T T A I T H R I G R L
UniRef90_G5BQX8         S L E Y E A Y I P M A E N E I R K I C S D I R Q K W P V K H I A V F H R L G L V
UniRef90_E0XXD4         K L E Y E S H E S M A L N Q M D Q V A E E A S Q K W P I H Y V E I I H R L G T M
UniRef90_P9WJR2         R L F Y E A Y P P M V I R T L M S I I G R C E D K A E G V R V A V A H R T G E L
UniRef90_H3NTG7         T L H L E C Y V E M A E R V L N D L G A E A R R R F D L K A W Q I V H R F G S L
UniRef90_UPI000299E157  A L N Y E A Y P T M A E R K L G E L E T A A R A R W P I D Q V G I V H R L G H L
UniRef90_U2ZM31         A L F L E H Y P G M T E R A L A A I E A E A R A R W P L Q D V L I V H R H G L L
UniRef90_UPI0002DF3223  H L D Y E A Y K P M A E K K L A E I G E E I S E R W P G V I T T I A H R T G K L
UniRef90_C1F3F4         T R V Y E A Y E E M A L E Q M R Q L A G E A K Q R F A I H D V V M V H R L G R L
UniRef90_UPI000466D05D  S G E L E H Y P G M A E G E I R R I A A Q A A E R W P V T S L T V I H R H G K L
UniRef90_T0C8U5         T R D Y E A Y D P M A L S Q M H Q I Q Q D V E R Q F P G I T T L Q W H R I G K L
UniRef90_Q1AT08         R L E Y E A Y R P M A D R K L R E I G E E I Q R R W D A R H V S I V H R I G R V
UniRef90_E3DYE8         R L E Y E A Y E P M A V K M L A K I G E E I E A E W P G A S A A I T H R V G V L
UniRef90_B8HU18         A L E Y Q A Y E P M A L K I F A Q I A D Q I Q E Q W P V E R V V I Q H R I G R L
UniRef90_UPI0002F1C030  Y L A Y E A Y K P M A E K K M A Q I G E E I E K K W P G T I I A I A H R I G E L
UniRef90_A0A010PG16     G I E L E H Y P G M T E K A L M L L E Q A I E R F E L N S A G A L H R V G R I
UniRef90_W5L220         R L E Y E A Y V P M A E S E L K K I C S E I R V K W P V R H I C I H H R L G L V
UniRef90_J0LFC4         R L E F E A Y G K M A L K E M Q K I A E E A Q A K W P I E K I L L H R T G V L
UniRef90_UPI00036F5CCF  Y L E Y E A Y Q P M A E N M F E Q I T K E V K E K W N I T D M S I A H R V G K L
UniRef90_T0K6B3         G G E L E H Y P A M T E P Q V D R I V D Q A L E R W P L L G V T V I H R V G R L
UniRef90_B4KBH3         S L E Y E A Y E S M A L K E M G K I C S E L R I R W P L K H I A I Y H R L G S V
UniRef90_E6SJL1         R L E Y E A Y L P M A A E E L A R I G Q E A E A R W P G V R L A I G H R T G P V
UniRef90_UPI00041C9DC7  H L E Y E A Y I P M A E K M L A K I G D E I A E R W P G V I T A I G H R I G K L
UniRef90_M7P2L3         G M Q L E H Y P Q M T A H Y L D K L E Q Q A R Q Q W P L L D C L I V H R V G A I
UniRef90_K9Y891         Y L E Y Q A Y E P M A I A L F K Q I A A Q I R E R W P V N R V V I H H R V G R L
UniRef90_UPI000288F18B  T L A L E H Y P G A T E A A L E A I A E Q A V A R W D L L G A R I T H R V G D M
UniRef90_UPI00046F7A66  Y L A Y E A Y E P M A E K K L A E I G A E M E A K W P G V K A A I A H R I G E L
UniRef90_UPI00037C1C2F  Y L E Y E A Y I P M A L S Q L Q K I G K H I A N T W S G A R C A I S H R I G S V
UniRef90_I0I898         F L N Y E A Y T E M A E A M M A R I G E E I M Q Q W P V K A V S I L H R V G R L
UniRef90_UPI0004061D19  G K T L S H Y P G F T E S Q I S E I A R Q A Q A R W P L V G W R I L H R V G A M
UniRef90_UPI000346EC96  G L E Y E A Y T E L A I A E G E R V L A E A T E R Y G V L A S A V H R V G N L
UniRef90_UPI00036BA215  A L I L E H Y P E M A Q E E L E R I E A E A R A R W P L I D A L L V H R Y G R I
UniRef90_S8DI52         E L R Y E A Y V P M A V R R I K S I C S S A R S S W N L H S I A V A H R L G R V
UniRef90_Q97CL5         A L Y Y E A Y K E M A E M Q I A D L I D E A K K K Y N I L D A A V C H R I G L V
UniRef90_I0JKG7         Y L E Y E A Y K A M A E K K L E E I G H E I K K K W P E A E T A I V H R V G R L
UniRef90_B2ALQ5         S L T Y T S Y R P L A L Q T L S S I A S S L L T K H A L K G I A I V H R L G T V
UniRef90_J9HFF2         H L F Y E A Y P A M V Y K Q L A A I Q S D V E R R F P G I Q T L Q W H R I G K L
UniRef90_B8GHP4         G I E L E A Y E V A V R E L R K I V E K A V S Q H N L H S V T V V H R V G P L
UniRef90_A0A024PI14     F L Q Y E S Y K E M A E K K L E Q I A T E I D Q H W P E A V T V I A H R V G R L
UniRef90_L8MVX2         Y L D Y Q A Y D A M A L Q V F Q E I S D R C H R Q F P I T E V V I H H R L G K L
UniRef90_UPI00026CCE42  T L E L E H Y P G A T E A A L Q R L V D E A R E R W G L I D A R I T H R V G A M
UniRef90_UPI00040AD55D  H L E Y E A Y E E M A L A Q M R K I E H E V K A A H P D V W T L Q W H R V G R L
UniRef90_S0AN65         D E T Y E A Y E E M A I I K E K I I K D A Q K K Y P V I N V A V I Q R I G R V
UniRef90_C5ZZS4         K L I Y E A Y E E M A I I E E M K K I R E E A L E R F P I L D M I I W H R Y G E L
UniRef90_V5HSH8         F E D Y T S Y A P L A L R T L S T I A E D A V S K Y Q L T G I S I A H R L G V V
UniRef90_S7VDP1         K L E F E A Y E P M A I S E M N K L A E I A A K K W P L K K I V I V H A L G V K
UniRef90_A9GF43         L L E Y E A Y G T M A E A E L E R I L S E I A A E I P G V R V A A T H R V G A L
UniRef90_Q1GU00         E L F L E H H P T M T E A E L A S L A H A A V D R W K L G A L T L I H R V G A M
UniRef90_A0B539         G M E V E A Y D E A A L E E L K R I K E E A I A R F G L S F V D V V H R K G R L
UniRef90_D8RBC2         E L R Y E A Y V P M A S S Q L R K I C Q A A R E R W E L L I G V A V A H R I G V V
UniRef90_F7B2K4         R L E Y E C Y I P M A E M E L K K I F L D V R R Q W P V K H L A V H H R L G L V
UniRef90_D9QIC1         T L A L D A W P G F T E R V M G E L E T E T R A R F D L I D V V A V H R W G E V
UniRef90_L0HAU3         E M E L E A Y E E V A V A E M E K I A A D A T R M H G L L H V D I I H R I G R L
UniRef90_UPI000422D1C0  S L Q Y E A Y V D M A I E H M R R I E A D V K Q K Y P G T I T L Q W H R I G T L
UniRef90_UPI0004714F97  A L E L E H Y P G M T E S Q M Q R I A E S A C T R F G L V G C T V I H R V G R L
UniRef90_T0F6W4         Y L E Y E A F P E M A D K M I R S I L E E A G K K W G L Q Y I D C Q H R L G K L
UniRef90_U4LB81         T L S Y S C Y M P L C L R M L T T I A R E I K K E H N L Y G I A F I H R L G D V
UniRef90_Q6L058         A L Y Y E A Y I D M A E S I I R G I I D D A K S R Y N I I D A S V S Q R L G I I
UniRef90_UPI0002F54C01  G L S Y E A Y A E L A I A E G E R I V A E A I A R Y G V T D A R C V H R T G D L
UniRef90_J7QEJ9         A L E L E H Y P G M A E A E I R R V A D E A L D R W P L Q G L T V I H R F G R L
UniRef90_T0R6S9         Y L E Y E G Y V P M A E K E L L A I C A S I R R Q W P V V G V A M M H R L G V V
UniRef90_M1ZDT1         Y L E Y Q A Y I P M A L K K M K E I G E E I R G N W P G S R V A I V H R V G S L
UniRef90_T2MI49         T L F Y E A Y E P M A K S E M L K I S L E A Q K K F N V A R I C I M H R L G E V
UniRef90_UPI0003B4D363  A L E L E Q Y P A M T E A A L R S I S E A A T E R F S L T G A I I I H R I G R L
UniRef90_H3ZL38         K L I Y E A Y E E M A I I E E M K R I R E E A L K K F P I L D M V I W H R Y G E L
UniRef90_R9GWB3         Y L E Y E S Q I S M A S K M I A L I L E E A K S R W N L T I A T A Q H R I G K V
UniRef90_UPI0004785498  H L E Y E A Y A S M A V P V L R A L A E E A R A R W P I G R V A I H H R I G R L
UniRef90_O67928         A L E Y E A Y P E M A I K E M E K I R Q E T I E K F G V K E V F I H H A T G E K
UniRef90_H8KW28         K L F F E C Y H P M A L D E M E K I A E L A K K G F D I Q E I A I H H A T G E K
UniRef90_K0C8P5         S L R Y T A Y A P L A E K R I A E I E Q Q T R E R F G L S Y C R V V H R L G A L
UniRef90_A9S6R9         F E D Y E A Y H A M A L E H L R R I C K V A R S R W A L T R I A I V H R I G V V
UniRef90_A1CJM9         F E S Y T C Y P P L A L K T L L D I A T K A A E K F R L E G V Y Y I A H R L G V V
UniRef90_I8I6P7         Q L S Y T S Y P P L A L R T L T Q I A R Q S K E K H G L I A V S I S H R L G T V
UniRef90_UPI0003B6AE54  H I T Y E G F E P M A V K V M R T A A D A A V E R F G P L R V F L Q H R L G R L
UniRef90_UPI0003738915  A L F L E H Y P G V T E A E I C R I A E D A A A R W P L T A V R V I H R V G S L
UniRef90_C1DT63         E L H Y E A Y V S M A E K V I N E I I Q E A K E K F N I H H H C V V H H R T G V V
UniRef90_F0RQ19         L I E A Y A S M A Q K V L H E A A Q A R Q R F G G L A V Y L V H R V G R L
UniRef90_F4QL23         Y L Y L D W Y P G M T E A S I R A I A D A A K A R F D I R E V A V L H R C G R V
UniRef90_U5DHZ0         Y L D Y Q A Y E P M A R V V F Q Q I A Q R M R E R W D I N R V V I H H R I G R L
UniRef90_UPI00036F4FD2  A M E Y T A Y A P L A R R E L A D L E A E T R E R F G V P V C R I V H R T G R L
UniRef90_S3UIW9         H L E Y E A F A P M A D E M I G T L L A D A R K K W D L L H T H C V H R L G V L
UniRef90_UPI0003778CA6  N L V L E H Y A G M T E K L I Y E M V E E A S K R W D I N S V S V V H R I G S L
UniRef90_C1FHS7         K L E Y E C F T P M A L A K M R E L C A A V R G T W D V A K I A M A H R T G T V
UniRef90_A4WWI4         A M E I E H Y P G M T E R A I A A I A S E A V E R W R L V D A L V I H R Y G R L
UniRef90_E6QSW5         R I E F D A Y P S M A L K V L T A L R E E A I L K F A L F E A R I V H R I G M V
UniRef90_K2HFI8         T L T L E H Y P G M S E R R L R E L C E Q V A A R W P L A R V L A W H R V G V M
UniRef90_UPI0002C2E0B7  E L R Y E A Y V P M A I R C M K S I C S S A R S S W N L V S I A V A H R L G P V
UniRef90_D9V381         D L T Y E G H P T A R D V L A E V V N D L A A R W G V R A V A V S H R V G A L
UniRef90_A6DT46         H L Q Y Q A Y E L A V K E G D R L I A E A F D K F N I H K V F C A H R T G D L
UniRef90_E8U2Z4         Y I D Y E A Y A P M A E R I M R D A L K R A R T H D I G R A Y L A H R V G R L
```

```
                                90        100       110       120
UniRef90_UPI0003B5B04B  A V G E P I M M V A T A A R H R R A A F E G A D Y L M D W L K S R A P F W K R E
UniRef90_G3MR74         P V G E A S V L I A I S S E H R Q E A Q E A V K Y S I D E V K R R V P V W K K E
UniRef90_M5P4Y8         E I S D A A V V I A V S S P H R K A A Y E A N E Y A I E R I K Q I V P I W K K E
UniRef90_G5BQX8         P V S E A S I I I A V S S A H R A A S L A A V S Y A I D T L K A K V P I W K K
UniRef90_E0XXD4         E V M E C S I A I A V S T S H R A D A Y E A S R F I I D T V K R S V P I W K K E
UniRef90_P9WJR2         Q I G D A A V V I G A S A P H R A E A F D A A R M C I E L L K Q E V P I W K K E
UniRef90_H3NTG7         S S E T P I V F V A T S A D H R A E A F S A C E F V M D T L K T D A P F W K R E
UniRef90_UPI000299E157  E L G E I S V A V A V S C P H R K Q A F E A G Q F L I D E L K V S V P I W K Q E
UniRef90_U2ZM31         Q A S E P I V F V G V G S A H R Q A A F E A C A Y L M D Q L K T R A P F W K K E
UniRef90_UPI0002DF3223  E I S D I A V V I V T S A P H R E D S Y R A N E Y A I E R I K E T V P I W K K E
UniRef90_C1F3F4         E L G E S S V L I G V C S A H R A A A F D A C R W L I N T L K K T V P I W K K E
UniRef90_UPI000466D05D  R P G E E I V L V V A A S I H R Q A A F E A A S F L M D F L K T S A P F W K K E
UniRef90_T0C8U5         T P L D I A V I C G A S S P H R K Q A F E A A S L L I E R L K K E V A I W K K E
UniRef90_Q1AT08         D P G E A S V A I A V A A P R R D E A F Q A S R Y A I E R I K Q V V P I W K R E
UniRef90_E3DYE8         D I G E A A V V I A V S S P H R K A A Y E A N E Y A I E R I K Q I V P I W K K E
UniRef90_B8HU18         I I G E I S V L I A V G S P H R A E A F A A C Q Y A I D T L K Q Q A P I W K K E
UniRef90_UPI0002F1C030  Q I S D I A V V I S V S S P H R H D A Y A A N E Y A I E R I K E I V P I W K K E
UniRef90_A0A010PG16     Y N N E Q I V W V G A A A P H R Q A A F D A A N Y L M D M L K Q S V P L W K K E
UniRef90_W5L220         P I T E A S V I I G I S S P H R S D S L E A V K F C I D T L K A T V P I W K K E
UniRef90_J0LFC4         Q V G E V P V I I A V A A A H R A D A A F D A C R Y I I D T L K Q T V P I W K K E
UniRef90_UPI00036F5CCF  K I G E T S L I V A I G S P H R K E A I A A T D Y T I D R I K K I V P I W K K E
UniRef90_T0K6B3         E P G A R I V F V G T A S R H R T A A L E S C A F L I D W L K S H A P F W K K E
UniRef90_B4KBH3         P V A E E S V V I A V S A P H R P A A L E S V S F A V D K L K S S V P I W K K E
UniRef90_E6SJL1         A I G E A S V V I A A A A P H R P D A F A A A R Y A I D E L K V R A P V W K R E
UniRef90_UPI00041C9DC7  E I S D I A V V I V T S S P H R T D S Y R A N E Y A V E R L K E I V P I W K K E
UniRef90_M7P2L3         A P N D P I V L I G C W S A H R R A A L E A C A W L I E E L K Q R A P F W K K E
UniRef90_K9Y891         K I G E I S V L V A V G C P H R S E A F A A C Q Y A I D T L K H N A P I W K K E
UniRef90_UPI000288F18B  H P G E I V V F V G T A A R H R G A A L E A C A F L I D R L K T E A P F W K K E
UniRef90_UPI00046F7A66  H I S D I A V V I A V S S S H R K A A Y E A N E Y A I E R I K E V V P I W K K E
UniRef90_UPI00037C1C2F  G I A E T S V I I A V S S A H R D D A Y A A S R F A I E R L K E T V P I W K K E
UniRef90_I0I898         E I G E P S V V I A V A T P H R G D C F E A C Q Y A I E R L K A I V P I W K E E
UniRef90_UPI0004061D19  T A E E P I V F V A T A S R H R R D A F E A A D F L M D F L K S E A A F W K S E
UniRef90_UPI000346EC96  A I G D L A V W I G V S A P H R D E A F R A C R Y I I D E I K H R L P I W K K E
UniRef90_UPI00036BA215  R P G E P I V L V A T L S S H R A A A F A A A E F L M D Y L K T S A P F W K Q E
UniRef90_S8DI52         P V G E V S V F I A V S S V H R I D A L D A S K F L I D E L K A S V P I W K K E
UniRef90_Q97CL5         G L T E D S V V I S V S S A H R S S A F E A C R Y I I D T I K E R V P I W K R D
UniRef90_I0JKG7         E I T D I A V V I A V S T P H R A D S Y E A S R Y A I E R I K E I V P I W K K E
UniRef90_B2ALQ5         P I G E E S I L I A V S S A H R K A A W L A G E E A L E E C K E K V E V W K R E
UniRef90_J9HFF2         V P T D I A V I C G A S S P H R A A A F E A A Y M L I E R L K R E A A I W K K E
UniRef90_B8GHP4         K V G E N I V A I V V S A G H R R E A F L G C E V I I D W L K T E V P I W K K E
UniRef90_A0A024PI14     E I S D I A V M I A V S T P H R S D S Y E A S R Y A I E R I K E I V P I W K K E
UniRef90_L8MVX2         K I G E I S V L V A V G S P H R S E A F A A C R Y A I D T L K V E A P I W K K E
UniRef90_UPI00026CCE42  A P G D V V V F V G T A A A H R A P A L E A C A F L I D R L K T D A P F W K K E
UniRef90_UPI00040AD55D  E P T D V A V I C A A S A P H R A Q A F T A A R T L I D R L K K E V P I W K K E
UniRef90_S0AN65         N V G E D S I G I A V S S E H R D S A F H A C E F I I D K I K I L P P I W K K E
UniRef90_C5ZZS4         E V G E N T I L I I A S G K H R E A C M W T V D E V K K R V P I W K K E
UniRef90_V5HSH8         P I Q E A S I A I A V S S G H R R A A W R A G E E V L E R C K E K A E I W K Q E
UniRef90_S7VDP1         Q I G D P V V V I G T S S A H R Q D A F E S C R F L I D E L K K S V P I W K K E
UniRef90_A9GF43         R V G D V A V A C A A A S A P H R G E A F R G C R L L I D R I K E R L P I W K K E
UniRef90_Q1GU00         A P G E T I V L V L A S S R H R A E A L L A A C E F L I D R L K T D V M L W K R E
UniRef90_A0B539         L L G E V I V A V V C A S S H R K E A F Q A C E Y V I D E L K R R V P M W K K E
UniRef90_D8RBC2         P V G E E S V F V A A S S I H R K E A L A A C Q F L I D E I K A S V A I W K K E
UniRef90_F7B2K4         P V S E A S V V I A V S S P H R S D S L D A V K Y C I N R L K A T V P I W K K E
UniRef90_D9QIC1         R V G E A I V F V A A A V H R R D A F L A A C F L M D Q L K T R A P L W K K E
UniRef90_L0HAU3         S V G E N I L I V V S A G H R E E A Y A G S R H I I E E I K K S V P I W K K E
UniRef90_UPI000422D1C0  K P T E I A V I C A A A S P H R D V A F E A A R M L I E R L K K E V P I W K K E
UniRef90_UPI0004714F97  E V G M P I V L V L C A S A H R A A A F D A T E F I M D W L K T R A P F W K R E
UniRef90_T0F6W4         E I S E I A V I V T G S M H R E E A Y T A N R Y I I D R V K H E V P I W K R E
UniRef90_U4LB81         K V G E E T V H I A V S S K H R K E A W L A G E E A L E E V K K H A E I W K R E
UniRef90_Q6L058         P V G D E S I Y I A V S A P H R N D A F D A C R F I I D R I K T E P P I W K K E
UniRef90_UPI0002F54C01  K I G D M A V W V G A S A P H R D E A F R A C R Y I I D E I K H R L P I W K K E
UniRef90_J7QEJ9         R P G E Q I V L V L A A A R H R A D A F A A A F L M D F L K T R A P F W K K E
UniRef90_T0R6S9         A V G E A S V L A V S S P H R R E A L E A V A Y A I D T L K A R V P I W K L E
UniRef90_M1ZDT1         Q I G E A A V V I A V G S P H R D A A F L G S R H A I E R I K A M V P I W K K E
UniRef90_T2MI49         P I A E S S I I I A C S S E H R S N A I N A V E F L I N E L K S K V P I W K K E
UniRef90_UPI0003B4D363  E A G E P I V L I A A A A P H R A D A L D A C A Y L I D R L K T G A P F W K K Q
UniRef90_H3ZL38         E V G E N T I L I V V A G K H R K E A F E A C I W A V D E V K K R V P I W K K E
UniRef90_R9GWB3         K V C E S A V V V L T A S P H R T E A Y A S N R Y I I D R I K H E V P I W K C E
UniRef90_UPI0004785498  Q I G E T A V V V A V A A P H R R A A F E A A A Y L M D R I K E V A P I W K R E
UniRef90_O67928         K I G E P S F L V L A V G G H R E E T F K A C R Y A V D E T K K R V P I W K K E
UniRef90_H8KW28         L P G D V V I V A V S S Y H R D A A F K A C Q F A I D T L K E T V P I W K K E
UniRef90_K0C8P5         R I G D V A I V C V A R A A H R A E A F E A C R Y L V D E V K H Q A P I W K E E
UniRef90_A9S6R9         G V G E E S V L V A V S S V H R K E S L H A C E F L I D E L K A S V P I W K K E
UniRef90_A1CJM9         P I Q E S S I V V A V S A G H R G M A W R A G E E V L E R V K A R L E V W K R E
UniRef90_I8I6P7         A V G E A S I L I A V S S G H R R A A W R A G E E I L D E C K A K A E I W K R E
UniRef90_UPI0003B6AE54  H P G E A S I L I G V A S A H R R A A L E A C D F L I E D L K R T V P V W K D E
UniRef90_UPI0003738915  A P G E G I V L V L V A S G H R A A A F A G A A F L M D Y L K T E A P F W K R E
UniRef90_C1DT63         P V G V P S F L V V V W A G H R Q E A F T G C R Y V V D N V K A R A P I W K K E
UniRef90_F0RQ19         Q P A E A S I V I G V G S P H R A E A L E A T D W L I E H V K A V I P V W K L E
UniRef90_F4QL23         E A G E P V V F V A A A S E H R R A A F E A V D Y M M D R L K S E A A L W K R E
UniRef90_U5DHZ0         R V G E I S V L V A V G C P H R V E A F T A C Q Y A I D T L K H N A P I W K K E
UniRef90_UPI00036F4FD2  E I G A S V V V V R A P H R G D A F D A A R Y A I D T L K Q R V P I W K H D
UniRef90_S3UIW9         Q V S E V A V L V T T G S M H R A E A Y E A N R Y I I D R V K H E V P I W K K E
UniRef90_UPI0003778CA6  K P T D R I V F V G V A S S H R L E S F R A A E Y I V D Y L K V H A T L W K K V
UniRef90_C1FHS7         G V G E S S V I I A V S S A H R R E A L E A C H W A I D E L K A T V P I W K K E
UniRef90_A4WWI4         G P G E P I M M V A T A A A H R A E A F A A A E F L M D Y L K S R A P F W K K E
UniRef90_E6QSW5         G A G E Q I V F I A T G A E H R A P A L H A C E W L I D A L K Q H A P I W K K E
UniRef90_K2HFI8         T P A E T I V L V G V A A A H R R E A F E A C D C L M D R V K T E V P L W K K L
UniRef90_UPI0002C2E0B7  P V G K T S V F I A V S S V H R V D S L D A C K F I I D E I K A S V P I W K K E
UniRef90_D9V381         T I G D V A L A C A V A A E H R G Q A F T A C A E L V D E V K A R L P V W K H Q
UniRef90_A6DT46         Q I G D S A V R L I V G A K H R G D A F E A C R F I I D E L K V H N N E
UniRef90_E8U2Z4         K P G E A S I L I G V A S A H R R V A L E A C D F L I E H L K V H I P V W K L E
```

```
                                              130             140
UniRef90_UPI0003B5B04B   I R R D G S V W V A A R D G D E D D L A R W
UniRef90_G3MR74          H Y E D G Q E W K E N K E C
UniRef90_M5P4Y8          H W E N G E S W I G D Q
UniRef90_G5BQX8
UniRef90_E0XXD4          F F S G G T S W S E G C E A
UniRef90_P9WJR2          F S S T G A E W V G D R
UniRef90_H3NTG7          D S E G D G Q W V T V A A R D I D R R Q R W
UniRef90_UPI000299E157   N W D D G S E W V D P T A D S S Q
UniRef90_U2ZM31          M G E Q G G Q W V D A R A S D A A A A Q R W
UniRef90_UPI0002DF3223   I W E D G E E W I G D S R R Y H S S L E
UniRef90_C1F3F4          H F V D G A V W A D G
UniRef90_UPI000466D05D   H L A D G T S W V E A K D A D D D A A A R W
UniRef90_T0C8U5          V Y V D G S V W Q A N A Q S T D V D
UniRef90_Q1AT08          V W S D G Y V W V G S Q V G T R P A A Q
UniRef90_E3DYE8          I W E D G E Q W I G D Q
UniRef90_B8HU18          W F A D G G R W
UniRef90_UPI0002F1C030   I W E D G E E W Q G S Q K Q Y H S S I K
UniRef90_A0A010PG16      F K G D K S E W V A A K A T D D K A A L K W
UniRef90_W5L220          V Y E S E E C W K E N K E C
UniRef90_J0LFC4          I F E D G E V W V A A H
UniRef90_UPI00036F5CCF   F F E G G E V W I G
UniRef90_T0K6B3          Y F A D G E R W V A R A E D E A K A A G W
UniRef90_B4KBH3          I Y E N D Q E W K A N M E C
UniRef90_E6SJL1          H Y A D G R E W V G
UniRef90_UPI00041C9DC7   I W E D G E E W I G
UniRef90_M7P2L3          T R P D G E R W V E S N
UniRef90_K9Y891          I L P D G T I W V D C
UniRef90_UPI000288F18B   T R G D Q T S W V E P R G S D D A A A A R W
UniRef90_UPI00046F7A66   I W E D G E E W L G A Q K
UniRef90_UPI00037C1C2F   I W A D G S E W K G A Q
UniRef90_I0I898          N W S D G Q V W V E G
UniRef90_UPI0004061D19   K V D G N E R W I E P R A Q D I T D K N R W
UniRef90_UPI000346EC96   H Y L E G D H W V A C S H T E R A
UniRef90_UPI00036BA215   E T A A G T G W V A A K D A D D A A A E R W
UniRef90_S8DI52          V Y T N G E V W K E N P E F F Q R R
UniRef90_Q97CL5          I L E N G
UniRef90_I0JKG7          H W E D G E Q W I G D Q K E T K Q
UniRef90_B2ALQ5          E F E D G G V W R A N R D G H Q G A
UniRef90_J9HFF2          F F A D G S T W R A N
UniRef90_B8GHP4          H R N D G A T W V
UniRef90_A0A024PI14      H W E D G E E W I G D Q K
UniRef90_L8MVX2          F W L D G S S W V N C
UniRef90_UPI00026CCE42   T R G G E T R W V E P R G S D D A A A A R W
UniRef90_UPI00040AD55D   F Y A D G E A W Q A N P E A
UniRef90_S0AN65          I Y S S G E V W
UniRef90_C5ZZS4          I T N E G E F W I E G N K
UniRef90_V5HSH8          E F V D G D E W R A N K D R D
UniRef90_S7VDP1          Y F T D Q T V W V N A H
UniRef90_A9GF43          H G P D G P Y W V G
UniRef90_Q1GU00          T F A D G R V W V E E R E G D R A R A E R W
UniRef90_A0B539          L T E E G G R W V
UniRef90_D8RBC2          I Y A D G E A W K E N A E F E S T R R S
UniRef90_F7B2K4          V Y E E E S Y W K E N K E C F W K D
UniRef90_D9QIC1          D G P D G R R W I E P R V S D H A D A A R W
UniRef90_L0HAU3          L T K D G G R W V
UniRef90_UPI000422D1C0   N Y K D G E V W Q A N
UniRef90_UPI0004714F97
UniRef90_T0F6W4          F F E D G S E W S Q G C Q H D H R
UniRef90_U4LB81          V F Q D G S A W R S N R D G E R
UniRef90_Q6L058          I Y N D S E L W K
UniRef90_UPI0002F54C01   H Y V T G E S W V A C
UniRef90_J7QEJ9          R R A D G A D W V S A K S E D E A A A E R W
UniRef90_T0R6S9          K Y A G D S R W K E N P E
UniRef90_M1ZDT1          I W E D G Q E W I G D Q
UniRef90_T2MI49          I Y A E G D T W K E N P E
UniRef90_UPI0003B4D363   H F A D G S K W V E A K G S D D A R A A G W
UniRef90_H3ZL38          V T D E G V F W I E G
UniRef90_R9GWB3          Y F T D G T E W G G N C N C H K E
UniRef90_UPI0004785498   V W A D G S E W V G         S E H E R S R R
UniRef90_O67928          I F K E G G E W V
UniRef90_H8KW28          F F E D G E I W V A A H
UniRef90_K0C8P5          F Y T D G S
UniRef90_A9S6R9          V Y E T G D A W K Q N S E
UniRef90_A1CJM9          E F V D G G E W R E N R E R D A E
UniRef90_I8I6P7          E F E D G E   W R A N R D W D
UniRef90_UPI0003B6AE54   V D E D G R H W V D G Q
UniRef90_UPI0003738915   H F A D G S R W V
UniRef90_C1DT63          V F K S G S Q W K E S
UniRef90_F0RQ19          E L E D G Q R W V E G
UniRef90_F4QL23          V G D G V D R W V E P R G E D A V S L K R W
UniRef90_U5DHZ0          F F P D G T E
UniRef90_UPI00036F4FD2   F F D D G
UniRef90_S3UIW9          Y F T D G S S W
UniRef90_UPI0003778CA6   V V N G I D E W V E P K H L D R S K F N K W
UniRef90_C1FHS7          F F E G G E V W K E N A E
UniRef90_A4WWI4          V T A D G A D W V A A K D A D E A A L R R W
UniRef90_E6QSW5          I N L Q G E T W V T P H
UniRef90_K2HFI8          S G P G G D G W V E A R D R D R E A A A R W
UniRef90_UPI0002C2E0B7   V Y A N G E V W K E N S E
UniRef90_D9V381          H F T D G D E W V N S
UniRef90_A6DT46          H Y T D G S S W V E C H E C S K H A
UniRef90_E8U2Z4          V T A S G E R W V D G Q
```

Multiple sequence alignment (positions 1–40)

```
                              1         10        20        30        40
UniRef90_UPI000474899B              R L T S S P L D V D A A Q A R V L   T P A M G A V A L F R G V V R V V
UniRef90_UPI00037A0E69            R A R L T Q D I I D N A K V E A D F S S A N M A G A A V C F R G V M R L D
UniRef90_UPI00035FD502          M R V E I T D G V I P A A E L V E S I K A G P D   G A V C V F D G I V R L D
UniRef90_UPI0003764E35              V R I Q E T D F S Q E E E V A A I R A V S S   C G G V V S F L G C A R V Q
UniRef90_W9YJ09                   I H I S L V Y D P L D I P T   Y L R F T R S P T A G A N V L F L G T T R V S
UniRef90_Q4PNH6
UniRef90_X1JLM5                        I E I T E R P I S P E L V V N K I   K T D S S G C V V T Y V G L I R V L
UniRef90_UPI00046BF0F5    S K D F I K L N Y E K L S T D   E V S E L V I S P C C G A V S L F I G T T R V I
UniRef90_Q01U18                     F A L T R H A I D T R G V V A R L M T G A E   G A V V N F E G T V R T L
UniRef90_Q9RR88          A D T H C R V T A D P L S L S E A   D A F L V K P E Y G A Q A Y F M G T V R V E
UniRef90_G1TZ14          A K D T I Q F T A E K L P V D V S Q L V I S L P   C G A V S L F V G T T R V I
UniRef90_G2SGB6            V W L R L M H E A L P V A E A V S F L   Q T P E A G G L A L F L G T T R T L
UniRef90_C8NAQ1            M I F H I T E T P I D T A A A R L A L C Q   P Q S G G Y V S F E G W V R V S
UniRef90_B0SEP9                  I T E N K I E I T D I I P S L   P S M G G Y V L F A G I V R V T
UniRef90_G6ECR9                         R H P E S S G G V S F I G G V R V E
UniRef90_D7DBD5          I R V G L T E S I I D V D S I V N E L I E H T K G G A I V S F I G Y V R V Y
UniRef90_B5YM31              S F L I Q S E T L P S S S T I Q N F L S S P T C G A I S T F I G I T R V T
UniRef90_H2WMD9          N D H I K I T D T R L D L   E T I M K L A A D S S C G A I S T F C G V T R V A
UniRef90_UPI00036D9472    D V R C E V V G T P L   L L A E A D A F L V R P E H G A Q A Y F V G T V R V E
UniRef90_I3ZJM9          M Q I E I T H D V I D S K A I T D A L   K A G E D G A V T V F D G I V R T L
UniRef90_I2EUU3              I E I I L S D T T L N E Q A C L D   F V K T D D S G G I V T F V G T V R V L
UniRef90_E8WWJ4          M R V E I L D E V L P T D A V M A E M   K A G A D G A V C V F D G I V R D N
UniRef90_UPI00037047CC    E P S V R V G T D P I D V A A E T D A L T A R T D V G A V V A F T G L C R D E
UniRef90_R1BYF7          D T V L L T P L P L P C G S L V P R V V   C P T A G A V A T F T G T T R V V
UniRef90_A0A031I3J1      I R I R V T P E A I D I A A E M A L A E A T A G A G A V A T F T G L V R V G
UniRef90_X1MKW5          M H V E I T E E D I D T S A I I E N I   K S S S A G G I A T F T G T V R V V
UniRef90_V5BL99          M K V E I C P E A F N P W Q A I Q D Y S A A A K F G A T S I F I G T M R V Q
UniRef90_G6XLT3          M R F Q M S A H P V G L E S L R E G L H   L P E A G G F C T F E G W V R V D
UniRef90_C5G0E5          S N I R V E L T Y S P L A P S   E Y T A H V R S P H A G A N V L F L G T V R V T
UniRef90_G4STI5              I K I S A D L F D P W H E V V V Y Q D S A K H G A T N V F V G T M R V T
UniRef90_Q816U7          N T Y Y E V I D T E I S I E E V T K K V I R R   E C G A V T T F I G T V R T L
UniRef90_C0NQH4          S N I H L E L T Y N P L D P T K S L A Q I R S   P H A G A N V L F L G T V R V A
UniRef90_W0RKJ4              R L E R A P L D V A S I V A R V A   H D G A G G T A L F V G T V R V V
UniRef90_B2YI90          T I V S L T T A E I D L D D L L R G I T   L P T T G A A I F T G I V R T Q
UniRef90_Q5D8Y9              I K I S I E P I E Y S N V F N   L I D D S S I G A V A T F F G I T R V Q
UniRef90_K3YVS9                       L D I A R Y V D H V R D L   S A G A I L A T F E G T T R V V
UniRef90_D3SPF4              R V Y L G V E W F G P E A I F S H Y T P P P D C G A S C V F L G I A R V T
UniRef90_UPI000479B341        R F R I A D A P F D I A P L H A R L   Q H E C A G A C A S F E G R V R V R
UniRef90_F0YHN5          A L D R A R V T G A P L S H D E A V   A F V T S D D C G A V A T F L G V T R V V
UniRef90_UPI00035A1796    D I V D V T E K K L S V D T   I T E L V S D D T C G A V S L F I G T T R V L
UniRef90_Q1DQS9              I E L T Y H P L S P S T   Y L A H T R S P A A G A N V L F L L G T T R D T
UniRef90_T2S0T5          R A D V V D E A I D V D   E L S R L V E H R A A G A V V T F G G V V R V R
UniRef90_F3NMU5              I R D T P L S V D E V L R A   A G D D A A G G T A L F V G T V R V D
UniRef90_A5PBR3                      S V G E A L A A F A A H G E A G G V V S F L G K V R V R
UniRef90_UPI00047A2AAD    V R V L V Q E E A F D V G A E T A R L A D S D E V G G L G S F L G V V R G T
UniRef90_UPI00037AC413    M T V I V T G C G F D P W Q E I Q N Y Q Q D G Q V G A T N V F I G T L R V K
UniRef90_Q4TB40             F K L T P D W L S V Q E V V D A V   G S S S C G A V S V F I G T T R V T
UniRef90_UPI00026C6C42                    D P R C G A V V T F D G V V R V D
UniRef90_B2G7N7                 R I S D E P I E V S E M Y K Q L V A   P E Y G G I D M F V G T V R T T
UniRef90_E8RLB9          A S V E T L L L P Q A L D G Q A L Y G R F V A A N R A G A I V T F S G R V R V S
UniRef90_N1VZQ0              I T E N K L E L P T S F P P L   P S M G G Y V L F A G I V R V T
UniRef90_S8AXZ5          N I H L T L T Y S P L D P N T Y L A E   T S S A A A G A N T L F L G T T R D T
UniRef90_I0XM94          E T Y S H I S S S P I F V S   S Q L P D I P E M G G F V V F S G I V R V T
UniRef90_B2GIJ1              R A G I T E E P L D   G E L A R R E V A D P G C G A V V G F S G V I R V T
UniRef90_A7H9H2          D P R F Q V V D R P L A L A E V V D A V S A   P G R G G I V T F T G A V R V L
UniRef90_E9UZF3              I R E T P L D V S E V M D A L   D D D A S G G V T L F V G R V R V T
UniRef90_F9XQE9          N I Y V S L T Y D P L D A T A Q M A R V   K S P Q A G A V V L F A G T T R I T
UniRef90_P91500          D D H I K L T D E V I D V   K V V D Q L V S H P S C G A I S T F N G V T R D N
UniRef90_N0DYI0              V A L R E A P L S V D E V L D A V R D   P A S G A V V V F I G V V R V N
UniRef90_I0ILP2                       H P G A G G V V I F E G R V R V L
UniRef90_D3PUF6          S D R Y C R V T D E Q L D L N E I V D A V S G   P S R G G I V T F I G K V R V T
UniRef90_Q5FTS0              R F R M A S A P V D L N A L R E D L H L A   V A G G F C T F E G W V R V D
UniRef90_G0L7Y4          M V V E I V D E   I D P G Q V Y A E L S   H P N S G G I C V F V G A V R V D
UniRef90_W0DC20             K V Y L G V E W L G A E R V L S S Y Q P P E D C G A S V F L G I A R V Q
UniRef90_UPI0002A4A50F    E D A V R L S R D P L S V Q E V V D A V S S S   C G A V S V F V G T R R V V
UniRef90_W4CI73          S D G L Y S I T D L P L N A E K L L D A V L D A N   H G A S L L F V G T T R T T
UniRef90_A7IA82          I A I Q T G D V D I G A L I T G   A K K K G T A I V V F D G V V R D D
UniRef90_UPI0003641459    V A V R E E P L S L D E V F A A V   G D P A A G G T A L F V G T V R V D
UniRef90_V2TVC5                 D I D L E Q V F D D I S N F P E C G G I G I F I G T V R V D
UniRef90_J1S9E8              A I R D T P L S V D E V F T A V G D A   A A G G T A L F V G T V R V E
UniRef90_K0C8T0          I K I I Q K A F D P W H E L R E M K R E G E F G A C A N F I G T M R V N
UniRef90_UPI00046E9E97    F L L T E D P I D P A A F T L A L R   R D E A G G Y C S F E G W V R V L
UniRef90_X1UUH7          I E I T D K P I S P   E L V V K Q V K T D S S G C A V T Y I G L I R V L
UniRef90_J9IEA3                        P E C G A V A A F S G I T R V K
UniRef90_UPI000474E5C4    V S V T T A P L N L A D H A S A V S R R   Q A G A V V T F S G E V R V R
UniRef90_R8ZS31             I T E N K L E I Q E I I P T L   P K M G G F V L F T G I V R V T
UniRef90_Q12YV0                Q P D H V T L N S L I E K V R S N P E A G G I G T F I G I V R T D
UniRef90_G0P195          N D Y V K L T D E K L D V G S   V D R L V S D P T C G A I S T F N G V T R V T
UniRef90_UPI0003BB9970                    S S G T T R N H F E G K K V I
UniRef90_F7XLN1                         E C G A I G T F I G I V R T R
UniRef90_B9JUW7          I R V Q R D N F D A A V E T A F I T D R A D I G A L V S F V G L C R D D
UniRef90_UPI0003B70F97                        T R V L
UniRef90_M3BBC9          N A Y V S L T Y D A L D A T A Q M A R V   K S A K A G A V V L F A G T T R V T
UniRef90_D7EAY2                Q P D W V T L D L L V K K V K N N P E A G A I G T F T G V V R V K
UniRef90_A0A009Z9N9          R V Q S Q D L S L D S   F D S I S E F P E C G G I G I F Q G T V R V T
UniRef90_M0LWN7                     S L V E A V K T D P D A D R A G A I A T F T G R V R T E
UniRef90_UPI00036DED01    A D G M F C I T G Q P L N G E S L L D K V L D   H G G L L L F A G T V R V T
UniRef90_UPI00035FB115    R I Q D Q P L Q L E P L L A W   G T H P E C G G L A L F A G T V R D H
UniRef90_X4ZAC8             V T E Q P L R T E D I L A K V L D R N   H G A S L F V G T T R T S
UniRef90_C1A904          H S A I V T S P I D L A A L I A R   A Q D A G V G A V S V F L G V H R V N
UniRef90_UPI0004151770    I R V R I A D T A I D A A E H E R A V S   L D V T G A G V T F S G N V R V T
UniRef90_W9FJP5          V R D S P L S L D E V V A A V   G D D A A G G T A L F V G T V R V T
```

Alignment (positions ~50–80):

```
                              50          60          70        80
UniRef90_UPI000474899B  G L E Y T A H P D A   E R I L G E V L A E A H A D F P D V R L W A E H R V G K L
UniRef90_UPI00037A0E69  T L V L K W H P R M T E K S L D D I A R N G L S R F G V D V V R V I H R C G P I
UniRef90_UPI00035FD502  H L D Y E A Y R E M A L E Q M R G L A A D A V T K F G V R D V T L L H R L G R L
UniRef90_UPI0003764E35  S I Q F E H Y A D M A L N E M K T L R D E A L K G F D I I A V R M V H R V T T V
UniRef90_W9YJ09         R L S Y S A Y P S L A L K S L Y A I A E D V Q K K H G L E K I V I V H R L G E V
UniRef90_Q4PNH6         S L T L E H Y P G M S E A A L E E I A Q K A K K K W P I D S I T I V H R I G R L
UniRef90_X1JLM5         S V E Y K D S E G T A E N E L Q E I A S E I R Q K W Q I N N L C H R I G K L
UniRef90_UPI00046BF0F5  H L E Y E A Y S P M A E A E I K K I C R D V R Q K W P V K H I A V H R L G L V
UniRef90_Q01U18         C L D Y E C Y E S M A L K M M A Q I G C D I A A T H Q V G R V A L V H R L G R M
UniRef90_Q9RR88         Y I D Y E A F A P M A E K V M R E A A A L A R E R H G E L R V W I E H R T G R L
UniRef90_G1TZ14         S L E Y E A Y L P M A E N E V R K I C S E I R Q K W P V T H I A V F H R L G L V
UniRef90_G2SGB6         S L F Y E A Y E P M A L A E M G R L S D E A L R R W P V R R L C L W R L G D V
UniRef90_C8NAQ1         H L I Y S A Y L G M A E R E G T R I I S E A K A Q F D I D A A A C M H R I G A L
UniRef90_B0SEP9         H L E Y E A Y S E M A N Q M I H S I I M D S K N K W E L Q Y A N C I H R L G S L
UniRef90_G6ECR9         A L E L Q H Y D P L T L P A M E K L A E R V H R R W E L D G L L I V H R S G V M
UniRef90_D7DBD5         E L Q Y T A Y Q P Y T E E V M E K I V V E E V R R N N L L G A I V I H R I G N L
UniRef90_B5YM31         H L S Y E G Y E P M A I K E L T K L C K E A K E K Y H V E K I V A V H L V G E C
UniRef90_H2WMD9         S L S Y D A H D L M A Y K K L R K I C A R I R E Q H P I R K I V I F H R V G E V
UniRef90_UPI00036D9472  Y I E Y E G Y A P M A G K V M R D A A A R A R A R Y G T L R V V V Q H R I G R L
UniRef90_I3ZJM9         H L D Y T A Y D A M A L E Q M R A L A A A A V E K F G V R D V A I V H R L G R L
UniRef90_I2EUU3         R L D F E A Y E P M A I S E M R K I A E Q A V E K F S L K K I A I Y H R V G S L
UniRef90_E8WWJ4         T R D Y E A Y R E M A L T Q M E G L A A E A I V K F G V R D V A L L H R L G R L
UniRef90_UPI00037047CC  A G E L E H Y P G M A E A E I G R I A A Q A A A R W P L L G L R V V H R S G P I
UniRef90_R1BYF7         R L E Y E A Y E A M A R K E M L A L C A A V R A R W P V R H I A I A H R T G T V
UniRef90_A0A031I3J1     T L E L E H Y P G A T E A A L E R V A A Q A V A R W S L G A A T I V H R V G P M
UniRef90_X1MKW5         A I E M E A Y D E M A L D K L K E V A S Q A K D K F D I V D I A I V H R V G R M
UniRef90_V5BL99         S M T L D Y Y P G M T E K Q L G K I L G D A G R Q W E I I D A Y V V H R V G E I
UniRef90_G6XLT3         G L E Y E A Y E A L A N R E G E R I L S E A M E K F D I S N A V A M H R T G T L
UniRef90_C5G0E5         R L A Y S S Y A P M A L A T M M A V A E E A A G K H G L V G V S I A H R L G E V
UniRef90_G4STI5         G M V L E H Y P G M T E K Q L D D I V K Q A I C D W H L L D A L V V H R V G E I
UniRef90_Q816U7         Y L E Y V A Y K T M A E K M L E K I G L E V K E K W P G T H V A I T H R I G T L
UniRef90_C0NQH4         R L T Y T S Y A P L A L R T L E K I A R G A V T K Y Q L C G I S I S H R L G E V
UniRef90_W0RKJ4         R I D Y E A Y E P M A E M R A V A L E V A E R H D G T R V A I A H R L G A L
UniRef90_B2YI90         Y L E Y E A Y R P M A E A K M R Q V A E E I R N R W P V V E I A I V Q R L G R L
UniRef90_Q5D8Y9         A L N Y E C Y L K M A Y L E L E R I V N N S Y K L W P L I H V I V L H R Y G L V
UniRef90_K3YVS9         E L R Y E A Y A A M A R R R L A G I L R E A R S R H A L R R L A V A H R L G P V
UniRef90_D3SPF4         E L H Y E A F H E M A L K V M E E I R K E A L K K F G V R E I F V H H R L G V V
UniRef90_UPI000479B341  G L R Y E A Y V E L A E A E G A R I L D E A L A R F D I L E A C A V H R T G E L
UniRef90_F0YHN5         R L S Y E A Y V P M A E A E M L K I C A V A R A R F E A K R C C I L H R T G E V
UniRef90_UPI00035A1796  R L E Y E A Y E P M A K K K M L E V C A S I R Q Q W Q V H K I A M I H R I G V V
UniRef90_Q1DQS9         F E D Y T S Y A P L A L R T L S S I A R D A V A K H G L C G V S I A H R L G D V
UniRef90_T2S0T5         E L E Y T G H P S A G D V V   A E V A R E I A A R F G V R A I A V A H R I G L L
UniRef90_F3NMU5         A L S Y S C H P T A   E A E L R R V A E K V V A D Y P V R A L A A V H R V G D L
UniRef90_A5PBR3         A L E L T F Y A P L T L P G M E E L A Q T A I N R F V L E G A L V W H R V G V M
UniRef90_UPI00047A2AAD  A L C L E H Y P G M S E A A L N D L A E Q A A R F D L A G C T V I H R V G R L
UniRef90_UPI00037AC413  G M T L E H Y P G M T E R Q L E I I I S E A A R Q W P V I D A L V I H R V G D I
UniRef90_Q4TB40         G L E Y E A Y E P M A R S E F S K L C A D I R Q R W P V A N I C V H H R L G W V
UniRef90_UPI00026C6C42  R L E Y T S H P S A P   A V I A E V A A E I A E R Y P D V L V A V A H R V G P L
UniRef90_B2G7N7         K I E Y S A Y H P M A E K Q L E K I A A P I E K Q G G   R V V V A A H R I G R L
UniRef90_E8RLB9         H L W L D W Y P G M S E Q S L K A I A E A A A E R F D V Q A L L V A H R C G A V
UniRef90_N1VZQ0         H L E Y E A Y S E M A N Q M I A D I I S D T F K K W D L Q F A E C I H R L G K L
UniRef90_S8AXZ5         F E S Y T T Y P P L A L K T L K A I A E D A V Q K H Q L K G V S I A H R L G V V
UniRef90_I0XM94         H L E Y E A Y A P M A N E M I A G I L A D A R N K W D L L H T N C V H R I G R L
UniRef90_B2GIJ1         G L A Y S A H P S A A Q   V M A E V V A G T A R E H P G T R V R A L H R I G A L
UniRef90_A7H9H2         R L E Y E A Y G P M A A R K L A E I G A E V A R A H G V   E V A I V H R V G V L
UniRef90_E9UZF3         G L D Y Q A H P T A   L A R L T E V A E K V A A D H G V A G V A A V H R T G H L
UniRef90_F9XQE9         H L S Y T T Y P S L A L R T L L R L S T S L L T S H S L T S I A I T H R L G R V
UniRef90_P91500         H G S Y D C H D L M A Y K K L R G I C A E I R A E Y P V K K I A I F H R L G K V
UniRef90_N0DYI0         A L D Y S A H P S A L D R   L Q E V C A S V G A R T P G V R L A A V H R I G A L
UniRef90_I0ILP2         F L E Y E A Y E A L A E R E G L A I L A E V R E K Y D I L E V L C A H R T G K L
UniRef90_D3PUF6         A I E Y E A Y R S M A I S S L T D I I T R C E A V A E D V R V A V A H R T G I L
UniRef90_Q5FTS0         G L E Y E S Y E A L A Q L E G E R I V A E A L E R F E I S Q A V A M H R T G S L
UniRef90_G0L7Y4         A L E F E A Y K S M A L K E M G K I A G E A T Q K W E L N K V V I R H A V G K K
UniRef90_W0DC20         E L H Y E A F P E M A I K V M E E I R Q E A L A K F P I K E V F I H H R L G V V
UniRef90_UPI0002A4A50F  G L H Y E A Y E S M V Q S E F T K L C A E L R G C W P V K H I C V H H R L G W V
UniRef90_W4CI73         A L D Y E A Y I P M A L S K L K E I G D E V Q N R W N   A R C A I S H R I G L V
UniRef90_A7IA82         E I E L E A Y E E V A V P E L E K I A A E A Q A A Y H L L S I D I I H R I G R L
UniRef90_UPI0003641459  G L G Y S S H P T A   E A E M R R I A E K V A A G Y P V R A L A A V H R V G E L
UniRef90_V2TVC5         G L E Y T S Y I P L A E K M I Q R Q I E M E V S Q K Y G A S Y L R V I H R I G R L
UniRef90_J1S9E8         G L G Y S A H P S A   E A E M R R I A E K V I A D F P V R A L A A V H R V G D L
UniRef90_K0C8T0         G M F L E H Y P G M T E K H L E K I V Q S A K K Q W D L L E T L V I H R V G A L
UniRef90_UPI00046E9E97  G L D Y Q A Y L P L A E T E A L A V L S E A E T R F D I L A A S C I H R I G T L
UniRef90_X1UUH7         W V E Y K D I G G T A E N R L Q E I A S E V R Q K W Q L N N I A I C H R V G R L
UniRef90_J9IEA3         T L Y Y E C Y E S M A L K H K L S E K A I I D Y N L S G I A V Y H R V G E C
UniRef90_UPI000474E5C4  D L E Y V A H P S A   E Q V L R E V A E D V A R R L P L R A L A V S H R A G W L
UniRef90_R8ZS31         H L E Y E A Y S E L A N Q M I E D I I N D A K T K W E L E Y A D C I H R L G K L
UniRef90_Q12YV0         N E D Y E K Y D K V A D A S I Q K I R E E M M Q Q D G I I D V L I H H K A G R I
UniRef90_G0P195         H L S Y D C H D L M A Y K K L R G I C S E I R K E F P I S K I A I F H R L G K V
UniRef90_UPI0003BB9970  S L E Y E A Y I P M A E N E V R R I C G D V R R K W P V R H I A V F H R L G L V
UniRef90_F7XLN1         M L V F E K Y E D V A E Q K I Q D I C K S L K Q K E G I N E V L I H H K S G M I
UniRef90_B9JUW7         A L E L E H Y P G M A A E M N R I A T L A I D R F D I M A L T V L H R Y G K I
UniRef90_UPI0003B70F97  G L F L G S Y S P M T E N G V E A A V E Q A L N R W P L E A L S V Y H R T G K I
UniRef90_M3BBC9         H L S Y C A Y T P L A L K T L S H I A R T L L Q K H S L T S I A I T H R L G P V
UniRef90_D7EAY2         M L E F E K Y E T V A E D K I N Q I S V E L K Q K P G I V D V L I H H K S G R V
UniRef90_A0A009Z9N9     A L K Y T S Y T P V A E K M I R Q I E Q D I I Q K Y G V P Y V R V I H R I G A L
UniRef90_M0LWN7         A L E F E T Y E V A D R K M A A I A E E L E S R D G V H R V L M H H R T G L L
UniRef90_UPI00036DED01  A L H Y A Y A V P M A L A K L Q I G S E V G E R W N   A R C A I A H R T G L V
UniRef90_UPI00035FB115  H L A Y T A Y A P L A E K Q I R D I E R A V A A K H G V P Y L R V V H R V G A L
UniRef90_X4ZAC8         A L Y Y E A Y I P M A L S K F E E I G R E V K E R W Q   A R C A I S H R I G L V
UniRef90_C1A904         G I D Y E A A Y E G M A A R E L A A V A E E V C D T T P G L R V A L E H R I G T L
UniRef90_UPI0004151770  A L G Y E G Y A S A   E A I L R E V A E I A A R P G V R S H R V G D L
UniRef90_W9FJP5         L L D Y T A H P G A G   A E L R R V A E K V A A D F P V R A L A A V H R T G R L
```

```
                                    90              100             110             120
UniRef90_UPI000474899B   A V G D D A L V V V A G S A H R R E A F A A C A E L V D R I K A R V P I W K K Q
UniRef90_UPI00037A0E69   A P G E T I V F V G V A S D H R R E A F Q A A D Y V M D R L K T D A V F W K R E
UniRef90_UPI00035FD502   T V G E T S V L V V A S A H R G A A F D A C R W L I D T L K K T V P I W K R E
UniRef90_UPI0003764E35   Q A G E Q I V L I V V A A E H R K A A F E A C E W L I D S L K Q R V P I W K K E
UniRef90_W9YJ09          K V E E S I A V V V S S G H R E S G W K G A E E I L E R V K A R A E I W K R E
UniRef90_Q4PNH6          K P E D M I V F V G C A S A H R H A A F D G C R F I M D Y L K T D A P F W K A E
UniRef90_X1JLM5          K V G D I N L V V A I A S A H R Q E G F A A C Q Y A I D Q F K Q K L P T Q K K E
UniRef90_UPI00046BF0F5   P V T E A S V I V A V S S P H R V A S L E A V H Y C I N T L K A T V P I W K K
UniRef90_Q01U18          L V G E T S V A I V T A P H R R P A F E A A L E G I N R L K K V V P I W K K E
UniRef90_Q9RR88          T P A V A S I V I G V A S P H R R P A L E A C D F L I E H L K I E L P I W K H E
UniRef90_G1TZ14          L V S E A N I I V A V S L A H R A A S L E A V S Y A I D N L K A K V P - - W T K E
UniRef90_G2SGB6          P A G E I S V L V G V A T P H R A E A F E A C R F L I D T L K R Q V P I W K R E
UniRef90_C8NAQ1          Q I G E L A V W V G V A A G H R G D A F A A C R Y I I D R I K E T V P I W K D E
UniRef90_B0SEP9          D V G E I A V I V S T G S V H R E E A Y L A N R Y I I D R V K H E V P I W K K E
UniRef90_G6ECR9          A P G D P I V L V G A A S R H R D A F A A D Y A M D H L K S E S W F W K R E
UniRef90_D7DBD5          K P G D P T I Y I F V S A N T R K E A F K G A S E I L E R I K H E A P I F K L E
UniRef90_B5YM31          P V G E A S V V V G S C S P H R R D A I K C T E F L I D E L K G R V P I W K K E
UniRef90_H2WMD9          K V G E S S V I I C T S S P H R K S A I H A T E M C I D L L K E E V P I F K Y E
UniRef90_UPI00036D9472   L P G E A S I L I G V A S P H R R A A L E A C D F L I E H L K V H L P I W K H E
UniRef90_I3ZJM9          E V G E T S I L I A V A S A H R G V T F E A C R W L I D T L K K Q V P I W K R E
UniRef90_I2EUU3          G I G E V P V V I A A A A H R G A A F D A C E Y A I D T L K E T V P I W K K E
UniRef90_E8WWJ4          V V G E T S V L I V V A S A H R G A A F D A C R W L I D T L K K Q V P I W K K E
UniRef90_UPI00037047CC   R P G E V I V L A A A S A H R A A A F E A A S F L M D F L K T R A P F W K K E
UniRef90_R1BYF7          P V T E A S V E I A I S S A H R A E A L A A C A F A I D E L K A Q V P I W K K E
UniRef90_A0A031I3J1      A P G A R I V F V A A A A P H R A A A L D A C A Y L I D R L K T D A P F W K R E
UniRef90_X1MKW5          E V G E T I V F I A V S A A H R A P G F D A A R F A I D E I K R V V P L W K R E
UniRef90_V5BL99          R P D E A I L V L A V W S A H R G D A F D A C R F I M E T L K S T A P F W K K E
UniRef90_G6XLT3          K I G E M A V W I G V S A P H R D A A F R A C R Y I I D E L K A R V P V W K K E
UniRef90_C5G0E5          A V G E E S I A V A S A A H R G P A W R A A E E I L E K C K E K V E I W K R E
UniRef90_G4STI5          K P N E P I V L V A V W A S H R G D A F D A G R Q I M E A L K N K A P F W K K E
UniRef90_Q816U7          Q I S D I A V V V A V S T P H R K A A Y E A N E Y I M E R I K Q I V P I W K K
UniRef90_C0NQH4          R V A E E S I A I A V A A G H R R P A W R A G E E V L E E C K A A V E I W K R E
UniRef90_W0RKJ4          E V G E A S V A I A T S H A H R G P A L A A C A E A I D V L K Q R V P I W K R E
UniRef90_B2YI90          E P Q T P T V L I A C T A A H R D D V F D A A R Y G I D R L K E I V P V W K K E
UniRef90_Q5D8Y9          P A G E I S V A I A V S S P H R K D S L E A V K F L I D S I K S C L P I W K K E
UniRef90_K3YVS9          P A G E A S V A A A S A T H R A D A M E A C R Y V I D E L K A S V P I W K K E
UniRef90_D3SPF4          K V G E A S F L V A V F G G H R E E T F G A C R Y V V D E V K K R V P I W K K E
UniRef90_UPI000479B341   A I G E L A V W V G A S A A H R D A A F E A C R W L I D E V K A R V P I W K H E
UniRef90_F0YHN5          A V G E A S V I I A A A S P H R K D A L A A V A W A I D E L K T T V P I W K K E
UniRef90_UPI00035A1796   P V K E A S I I I A I S S A H R K E S L D A V Q Y A I N T V K A V V P V W K K E
UniRef90_Q1DQS9          A V G E E S I A I A I S A P H R G A A W R A G E E V C K R R V E I W K R E
UniRef90_T2S0T5          A I G D V A L G C A V A A E H R K Q A F D A C S E L V D E V K R R L P I W K R Q
UniRef90_F3NMU5          G I G D L A V V V A V S C P H R A E A F E A C R K L I D D L K H E V P I W K H Q
UniRef90_A5PBR3          T P G E A I V L V A T A A R H R R S A F E A A D F L M D H L K S A A W F W K R E
UniRef90_UPI00047A2AAD   P V G A P I V L V L T S A A H R A A A L D A T R F L I D R L K T G A P F W K K E
UniRef90_UPI00037AC413   L P N E P I V L V A V W T S H R G D A F D A S R H I M E A L K S K A P F W K K E
UniRef90_Q4TB40          E V G Q A S V V M A I S S P H R H D G Q Q A V Q H C I S Q L K A K I P I W K K E
UniRef90_UPI00026C6C42   A I G D S A L V C A I A A P H R K Q A F V A C D E L V D T V K Q R V P I W K H Q
UniRef90_B2G7N7          G L T D I A V F V G V A A P H R A E A F K W C Q Y V I D T L K H E V P I W K K E
UniRef90_E8RLB9          K A E D E I F V V A A S A H R R A A F D A D Y L M D R L K S E A A L W K R E
UniRef90_N1VZQ0          N L G E V A V I V N T G G V H R D E A Y K A N R Y I I D R V K H E V P I W K K E
UniRef90_S8AXZ5          P I K E A S I A I A V S A G H R A A A W R A G E E I L E A C K E R A E I W K R E
UniRef90_I0XM94          G I S E I A V I V E T G S I H R A E A Y E S N R Y I I D R V K H E V P I W K K E
UniRef90_B2GIJ1          A V G D S A L E V A V A A H R T E A F A A C S A L V D R I K A S V P I W K K E
UniRef90_A7H9H2          A P G E A A V V I A C A A A H R T P A F R A C E A C I E R L K Q D V P I W K R E
UniRef90_E9UZF3          D I G D I A V I V A T A S G H R G E A F A A S R D L I D T L K A E V P I W K H Q
UniRef90_F9XQE9          D I G E S I L I A V S A P H R E A W R G G E A L E R V K G E V E V W K K E
UniRef90_P91500          D I G E S S V I I S T S S P H R K T A I Q A T E K C I D L L K E H A P I F K Y E
UniRef90_N0DYI0          T V G D L A V V V A A S A P H R G E A F A A A R D L I D T L K A E V P I W K H Q
UniRef90_I0ILP2          E L G E M A V W I G V A A V H R A P A F E A C S F V I D A I K Q R L P I W K K E
UniRef90_D3PUF6          D V G E T V V I I A A A G P H R A E A F Q A A R S C A E L M K W E T T I W R K E
UniRef90_Q5FTS0          K V G D V A V W I G V S A P H R D A A F R A C R Y I I D E I K H R V P V W K K E
UniRef90_G0L7Y4          E V E E P V V V V G A S S A H R E A C F E A C R Y L I D T L K E R V P V W K K E
UniRef90_W0DC20          K V G E P S F L V V A Y G G H R E E T F S A C R Y V V D E V K K R A P I W K K E
UniRef90_UPI0002A4A50F   K V G E A S V A M A V S S P H R H D G Q Q A I Q H C I S Q L K A R M P I W K K E
UniRef90_W4CI73          G L K E A S V I I A V S T P H R D T C Y E A S R L A I E L L K Q T V P I W K K D
UniRef90_A7IA82          A I G E N I L V I V V S A G H R K Q A Y E G S R F I I E A I K A G V P I W K K E
UniRef90_UPI0003641459   A V G D L A V V V A V S C P H R A E A F E A C R S L V D T L K R E V P I W K H Q
UniRef90_V2TVC5          D I G G K A I I A V A Y A P H R R E A F Q A C E E A V E R V K H E V P I W K E E
UniRef90_J1S9E8          R I G D L A V V V A V S C P H R G E A F D A C R K M I D D L K H D V P I W K H Q
UniRef90_K0C8T0          L P N D P I V L V A A W S V H R K D A F E A S R F I M E D L K S K A P F W K K E
UniRef90_UPI00046E9E97   A I G D M A V W I G V S A P H R D A A F T A C R F V I D E L K R R V P I W K R E
UniRef90_X1UUH7          N V G D I N I V I A I A S A H R E E G F A A C Q Y A I D R F K Q F M P T Q K K E
UniRef90_J9IEA3          P I S E A S V N L V A V S P H R K E A L Q A V A W A I D E L K M K V P I W K K E
UniRef90_UPI000474E5C4   A I G E C A L A C A V A A D H R A E A F A A C A E L V D R I K R R L P V W K R Q
UniRef90_R8ZS31          V V G E I A V I V S T G S V H R D E A Y Q A N R Y I I D R V K H E V P I W K K E
UniRef90_Q12YV0          M P L E D I V Y I V I A A G H R Q Q L F A A L S E T L D R V K S E V P I W K K E
UniRef90_G0P195          D I G E S S V I I S T S S P H R K T A I E A T S K C I D L L K E H A P I F K Y E
UniRef90_UPI0003BB9970   P V S E A S V I V A V S S A H R A A S L G A V S Y A I D A L K A K V P V W K K E
UniRef90_F7XLN1          K P G Q D I V Y I V I A A S H R H Q L F P A L S E A I E R L K A E V P V W K K E
UniRef90_B9JUW7          A A G E Q I V L V I A A S S H R Q A A F D G A N F V M D F L K T A A P F W K K E
UniRef90_UPI0003B70F97   R T G E T I V F V A T A S R H R A A A F E A A L F L M D Y L K T E A V F W K K E
UniRef90_M3BBC9          Q I G E E S I L I A V S S P H R Q A A W K A G E E C L E E V K K K V E I W K K E
UniRef90_D7EAY2          N P G E D I V Y I V V V A S H R T E L F Q T L S E A I E R V K S E V P I W K K E
UniRef90_A0A009Z9N9      D I G G T A I I A V A Y A A H R R E A F Q A C E E A V E R V K H E V P I W K K E
UniRef90_M0LWN7          E A G E D I F V V V L A G H R R E A F R T V E D G I D R L K A E V P I F K K E
UniRef90_UPI00036DED01   G L K E A S V I I A V S A A H R D T C Y E A S R Y A I D R L K A E V P I W K K D
UniRef90_UPI00035FB115   A I G E V A I Y C V A R A P H R A E A F E A C R K A V D R T K H E V P I W K K D
UniRef90_X4ZAC8          G V Q E A S V I V A V S S P H R A V C Y E A S R F A I E L L K R M V P I W K K D
UniRef90_C1A904          G I G E V S V A I A V H R H R A Q A C D G S R A I I E A L K Q R V P V W K K E
UniRef90_UPI0004151770   A V G E I A V V A A V S C A H R A E A F A A C E R L V E D L K H E V P V W K H Q
UniRef90_W9FJP5
```

```
                                                        130                      140
UniRef90_UPI000474899B   D Y A D G T H W V G
UniRef90_UPI00037A0E69   E G P F G T R W I E P T D R D H N D R K R W
UniRef90_UPI00035FD502   Q F V D G A V W A D G
UniRef90_UPI0003764E35   T T P D G E S W V S Q H
UniRef90_W9YJ09          W F A D E G V W R A N K D R D
UniRef90_Q4PNH6          E T K D G R T W V S E R E N D K A A K K R W
UniRef90_X1JLM5          T Y E D G S T L V T A
UniRef90_UPI00046BF0F5
UniRef90_Q01U18          H F V D G E V W V E G   E W D E
UniRef90_Q9RR88          A D G R G E H W V
UniRef90_G1TZ14          M Y E E S S T W K R N K E W F W A
UniRef90_G2SGB6          T L S D G Q R W V E
UniRef90_C8NAQ1          Y Y S D G S R W V L N H H C
UniRef90_B0SEP9          Y F T D G S E W S K G C V H D
UniRef90_G6ECR9          K R G S E W H W I E P R E Q D F E D I A R W
UniRef90_D7DBD5          K R D D G E Y W V
UniRef90_B5YM31          I Y E E Q S V W K E N V E
UniRef90_H2WMD9          E Y T D G E E W K S N E E
UniRef90_UPI00036D9472   A D E D G Q H W V E G Q
UniRef90_I3ZJM9          V F V D G A V W
UniRef90_I2EUU3          I F E D G E V W V S A
UniRef90_E8WWJ4          T F V D G V I W A D G
UniRef90_UPI00037047CC   H L A D G S E W V E A R D A D D A A A E K W
UniRef90_R1BYF7          V Y E D E A V W K A N R E A A H A A V K
UniRef90_A0A031I3J1      T R D G E A R W V E A R E T D D A A A S R W
UniRef90_X1MKW5          I F E D G T E W V G G
UniRef90_V5BL99          V S D T G T R W V E
UniRef90_G6XLT3          H Y L T G E E W V A C H Q C Q T A A A A
UniRef90_C5G0E5          D F A D G A E W R A N R D R D A D
UniRef90_G4STI5          R L Q N G E R W V E N N
UniRef90_Q816U7
UniRef90_C0NQH4          E F E E E G E W R A N R D T D S Q G N Y R
UniRef90_W0RKJ4          H F A D G T E W V D P T A A
UniRef90_B2YI90          T G P G G E W W V E G
UniRef90_Q5D8Y9          I Y E D G S T W K Q N N E C
UniRef90_K3YVS9          V Y D D G E V W K E N R E
UniRef90_D3SPF4          V F S D G T K W V
UniRef90_UPI000479B341   R Y A D G E A W L H P C Q T D
UniRef90_F0YHN5          I Y A E G D A W K Q N K E
UniRef90_UPI00035A1796   I Y A D S S S W K Q N K E C
UniRef90_Q1DQS9          E F P G Q G E W R A N R D T D
UniRef90_T2S0T5          V F D D G E E W V N C
UniRef90_F3NMU5          K F A D G E E W V G A G S C
UniRef90_A5PBR3          R R D D G W H W I E P R G E D H A D L V R W
UniRef90_UPI00047A2AAD   E F S D G S V W V E S R A E D D A A A A G W
UniRef90_UPI00037AC413   R L S A D S R W V
UniRef90_Q4TB40          V Y T Q D S S W K E N P E C S W A A H S K
UniRef90_UPI00026C6C42   V F D D G S E W V G A
UniRef90_B2G7N7          Y D T D K V R W
UniRef90_E8RLB9          V G P G F A R W V E P T A T D A V D L K R W
UniRef90_N1VZQ0          Y Y V D G S E W
UniRef90_S8AXZ5          E F V D G G E W R A N A D R D A E
UniRef90_I0XM94          F Y L D G S E W
UniRef90_B2GIJ1          S F A D G Q H W V G
UniRef90_A7H9H2          V F E D G S E W V G
UniRef90_E9UZF3          V F T D G D E W V G A
UniRef90_F9XQE9          W F E D G G V W R A N R D
UniRef90_P91500          E Y S N G E V W K S N I E D S K Q
UniRef90_N0DYI0          G F A D G S E W V G
UniRef90_I0ILP2          F Y G D G A V W V N C K D E
UniRef90_D3PUF6          I R P D G E E W I G
UniRef90_Q5FTS0          H Y L D G D E W V A C H H C
UniRef90_G0L7Y4          I F K N K T V W V S A H
UniRef90_W0DC20          V Y K D G G E W V
UniRef90_UPI0002A4A50F   V Y T Q E E S W K E N L E C
UniRef90_W4CI73          I N E S G Q H W V G      S E Q K A A D
UniRef90_A7IA82          L S R N G D R W V P G E H S H G Q R P K
UniRef90_UPI0003641459   K F T D G E E W V G A
UniRef90_V2TVC5          F Y S D G T H Y V E G C
UniRef90_J1S9E8          T F A D G E E W V G A
UniRef90_K0C8T0          N L A E K N R W V E K N T S
UniRef90_UPI00046E9E97   R Y A S G S E W I A C H E
UniRef90_X1UUH7          T Y K D G S I Q V E G N
UniRef90_J9IEA3          Y Y E D G E
UniRef90_UPI000474E5C4   R F A D G E E W V N C
UniRef90_R8ZS31          T Y I D G S
UniRef90_Q12YV0          I T I D G N F W V H D H A
UniRef90_G0P195          E Y S N G E V W K S N
UniRef90_UPI0003BB9970   I Y E E S S S W K R N K E C F W A A S D
UniRef90_F7XLN1          F T F D G E Y W V H D K
UniRef90_B9JUW7          H G K D G T T W V
UniRef90_UPI0003B70F97   I T E T G E V W I E P R E Q D Y Q D N Q R W
UniRef90_M3BBC9          W F E D G G M W R S N R D A E
UniRef90_D7EAY2          I T I D G N Y W V H D H
UniRef90_A0A009Z9N9      F Y T D G S
UniRef90_M0LWN7          R T T D G E F W V H E R A
UniRef90_UPI00036DED01   I G A S G E Q W L G A
UniRef90_UPI00035FB115   F Y A D G S
UniRef90_X4ZAC8          I G E S S Q S W K G A        D P A S R D N W
UniRef90_C1A904          H Y V D G D R W I D P
UniRef90_UPI0004151770   F F A D G E W V N C
UniRef90_W9FJP5          I F A D G E E W V G A C
```

Position ruler: 1 ... 10 ... 20 ... 30 ... 40

ID	Sequence
UniRef90_UPI0003B6A169	I T H Q P I P V E A F L K E K P A D S C G A S V H F I G T V R V I
UniRef90_D7BJX4	V Q E N P I D M V S L E E S V T C D A A G A I T S F C G R V R V T
UniRef90_Q46A64	Q P D R Y T L E A L I K K V R K N P A A G A I G T F A G I V R T S
UniRef90_D4U2B6	A E I A T G I T D E P L D T G A L I D S A R R D T C G A V A S F I G V V R V D
UniRef90_W7ID24	R A E V S G D D L S V D E H A A L V D H R A A G A V V T F A G V V R V T
UniRef90_UPI0003B424E5	A P I H A D V T A T P L D Q A A L H A R V A R R E A G G I V T F S G M A R V P
UniRef90_I1XGY5	I L D N D F Q P Y Q W L T E F S Q A G R D G A S A N F I G T M R V R
UniRef90_UPI000462E808	I S D R P L D P A E V E R A V T G P E H G A V V V F T G K V R V S
UniRef90_M7Y3Y8	I G Q S I A N H S S K T D I G G H C I F L G Q V R A D
UniRef90_U2G3Z6	N T R P H L T A E R L D L D A L L A E T E D D S C G A L V V F G G T V R V E
UniRef90_G7WND9	I E I T D G E L S L E D L V A G A K R P D A G A V V A F L G T V R V D
UniRef90_B2GCN6	R I S D E P L N V A E L Y A K L V D P K Y G G I D M F V G T I R Q W
UniRef90_D5BGW5	I D P S V I Y K E L S H P G S G G I C V F I G A V R V N
UniRef90_N8WUU2	R I Q D T A L D L E S F D P I Q S F P E C G G V G V F I G T V R V K
UniRef90_A0A059DN34	V R S E L A F T R I D S A A W L Q E L R E R G G H G A L V S F E G V V R L D
UniRef90_B8IF61	R L C I Q S E P F D V A A E I A A L S A A A G G R A V V T F T G L C R D E
UniRef90_E1FIV8	I Q T D E L Q L S Y A A E F V N K P E S G G T C I F L G T T R V V
UniRef90_H3FWS2	S D D I V R I T F D V L D V G E A M K V P V S S P S C G G T S V F V G T T R V V
UniRef90_W7DH83	A M I D V R L Q H E P I D V G S T Y Q Q L V N A R F G A V N M F A G T I R E W
UniRef90_W6M810	M R V E L R A T P F D P L A E L A R Y Q A N G R Y G A T A I F I G T M R V T
UniRef90_A5FZJ9	S M P R I V V T T E D I D V G A E L A A L E A A S F V G V V R G E A G G R R L T
UniRef90_UPI00044333CA	K V V
UniRef90_B1ZXL3	F H I S R T A I E P L A A A R Q L S D A Q A G A C V T F E G W V R V C
UniRef90_E4ZUS5	I H V E L T P H P L S T T S A T A F V R S P S A G A T V L F I G T V R V A
UniRef90_E6WUT3	R F E L A D S D F D I A P R R Q G L Q R D E A G A Y A S F E G W I R V S
UniRef90_Q2FMJ8	I A L T R D P I D P Y K F I E S A K K P E T G G I V T F I G T V R D D
UniRef90_D5EAP4	I R H M S E F P L T G S I G T F T G V V R T K
UniRef90_Q56210	Q I E L S L A P I P L S A A A E F C H D D R Y G A F A S F V G W V R V T
UniRef90_N8UUH8	R I K E V D L S L D D F E T I E N Y P E C G G I G V F I G T V R V R
UniRef90_C1C0B0	D E V S L S S E P L E L N T S K L S F P S N C G A T S V F F G S T R V T
UniRef90_UPI0003A5ED9C	Q F A L S E M P L Q A S M L R A A L E H P Q A G A F A G F E G W R V A
UniRef90_UPI0003F5A5D9	I G V R E T P L S V D E V F G A V A D P A A G G T A L F V G T V R V D
UniRef90_T1G0P9	V F E G K I V K
UniRef90_G3PRZ8	D I F K L S R D W L S V Q E V V D A V S S T S C G A V S I F V G G R R V I
UniRef90_F2KNM8	S L V E K V K R S E G S E R C G A I G I F V G F V R V E
UniRef90_F0XJ41	C Y V D L A E G P L D V N A V L A R V R S P K A G A N V L F S G S T R V A
UniRef90_R7XZ88	V E I R D E P L D V D E V V R A L D D E A A G G L T L F V G R V R V T
UniRef90_UPI0003B732D5	I T E S P L S T V E A E T T A G N E R A G A V V V F S G I V R V T
UniRef90_I3BTA0	M H I E L L T D R F D P W R Y L A D W Q A Q Q R S G A T A V F V G T M R V R
UniRef90_UPI0004782B41	R A A V G E E P L D V S E H A A L V D G P R S G A V V T F S G V V R V R
UniRef90_UPI00042611DD	I T K D P I I V A E L L A K V A D D R A G A I A T F D G R V R V T
UniRef90_UPI000404990E	R A E V T D E P V S V D E H A R L V E E A G A G A V V T F G G V V R V T
UniRef90_C2QEV0	R T L
UniRef90_D2B0I1	I R D S A L S V D E V Y S A V G D H A A G G T T I F V G T V R V T
UniRef90_V2UWF4	R I R N Q D L S L D C F A P I A D F P A C G G I G S F I G V V R V D
UniRef90_UPI00047990AB	M I A Q V V D D V P L S V A E H E D A V A D K A A G A V V S F A G V V R V T
UniRef90_UPI0004117763	R F A L T D T A L D T V A L Q A A L Q S P A A G A F A S F E G R V R D H
UniRef90_L8P9C9	I A I R R T P L R L D E V F Q A V G D E A A G G I V L F V G V V R V D
UniRef90_N9CBD6	R V Q A H A F G Q E I F D G I D C Y P E C G G I G I F I G T V R V K
UniRef90_W6MQU8	K V F L T T S P L D A Q K C I D F V K G D A G A V V Y F G G T T R V V
UniRef90_UPI000372C352	V N V H Q G P L D K R L V S E L A L E G D A G A V L T F A G V V R V V
UniRef90_UPI0003715A7C	V R I Q A Q D F D A A A E A A A L R G R T D I G A V V T F A G L C R A Q
UniRef90_A9WQ17	D A P D C G A V V G F S G V V R V T
UniRef90_F7VXS5	N I Y V A L T H D H L N Y Q T T I D R V R S P E A G A I V V F A G T T R V K
UniRef90_F0BAK5	F A L S D L P L P V E Q L R S G A A H P H A G A F A S F E G W V R V A
UniRef90_J9YZ44	I K I T K E G F S L E E E F K K I H S Q K N G A Y S F F L G T V R I D
UniRef90_F4CF39	I A D S I A K H S S K T D I G A H S I F L G G Q I R A D
UniRef90_UPI00041E13BE	R A E V S E A P I S V E H E D L V H R A A G A V V G F A G V V R V T
UniRef90_Z9JVR9	R A S V G E E P I S V E E M A S A V A D P R C G A V V T F D G V V R V L
UniRef90_A0A044SHD6	I Q A D E L Q L S H A V D F V N T P K N G G T T R D N F D G K Q V V
UniRef90_S2WDW1	V R V E I S P E P F N E A E V V A A T T D D K A G A V I T F N G V V R V E
UniRef90_UPI000420F8BF	S D E P L N L D A A L A A V E S D E C G A V V S F S G V I R V D
UniRef90_R8BHE3	L V R S P Q A G A I V L F S G T T R V K
UniRef90_A6E7T1	E P A F I A D S I G K H S S K T A I G G H S I F M G Q V R V T
UniRef90_E8MY42	P T T G A A C F F T G M V R T V
UniRef90_D3Q467	I H S E V T D A P I S V T E H E K L V C G P S C G A V V S F A G V V R V T
UniRef90_UPI000373D250	I R E T P L S V D E V F G A V G D A A V G T V R N H D G G Q D V D
UniRef90_UPI00047AC92F	V H A A V S D R P I G S D A A L A A V D S A A C G A V V G F S G V V R V T
UniRef90_Q9HI65	M Y V D I I E S E I P V M D L I D R I R N P K A G A I V T F E G T V R V D
UniRef90_Q55371	F D I S D Q P I N T Q P L I S A L Q C D Q A G A L V T F A G W V R V D
UniRef90_D7W1D1	P I F V A E S I T K H T V T I G G H S I F L G Q I R V Q
UniRef90_Q0W297	Q P D E V T L P E L I A R V H R N P E A G A I G T F T G I V R T K
UniRef90_F1Z790	V R L S C E P L D P I A E M A R F S Q G A E D G A I A S F V G I C R L V
UniRef90_UPI00036A8FDF	V Y A V V T D A P V N I A E L S K L V T N P H S G A V V T F C G D V R V A
UniRef90_Q2FSH4	I F I Q K E P I D T S H L F D L I S P E T G A L V L F A G V R A D
UniRef90_J3JIF8	V R A E V T E A P I S V T E L A D A V H D A A A G A V V T F E G V V R V S
UniRef90_UPI0004161F2B	I A D D I Q K H A A K T N I G A H S I F L G G Q V R V K
UniRef90_UPI0003719292	I A E S I A K H S S K K D I G A H S I F L G G Q V R V K
UniRef90_UPI00037BC90F	V D I R E T P L D T G E V C A A L D D P A S G G L T L F V G T V R V K
UniRef90_H1UYK8	C Y V A L T Y D V L D A T S I M N R V R S P Q A G A I V L F S G T T R D T
UniRef90_M1XK72	S L V A A V K R S E E A T Y S G A I A T F T G R V R T H
UniRef90_E9T3N7	S D V F A R I S E Q P L D P A I V D A V A G P E H G A V V A F T G V V R V S
UniRef90_A8LED5	E I R D T P L S V D E C L S A V R T A E V G G V A L F V G M V R V I
UniRef90_U5T0Y2	R V D A A A I D L D Q L F D D T A S A D A V V F G G T V R V T
UniRef90_D3F0J3	A A P H V A V S D A P L S L D G L V A R V R D P R A G A V V T F A G V T R V D
UniRef90_S2ZM09	R I R N D S I D V S A L A G K V A C D E A A G A I A T F D G R V R V T
UniRef90_W3WV14	E C Y V G L T D L L N V Q N V M D R V R S P Q A G A I V T F S G T V R V K
UniRef90_UPI0003B35290	V T D H P I D T A R L L A E V D D P A A G A V A T F A G I V R V T
UniRef90_E1IIL5	F R I C M E A I E P A P L V A Y A Q T A E D G A V V T F A G V V R N H
UniRef90_UPI0002DACB72	R L D A A P L D L G F H V E Q V S G P R A A G A V V T F A G V T R V D
UniRef90_UPI00036C5C74	V R I Q Q E N F V V T V A E L I K K S N N I G G I T F L G T G R E L
UniRef90_UPI0003B333A0	S I S G T A L D L A A H I E A V S G P E Q G A V A S F V G T V R V T

```
                                            50           60           70           80
UniRef90_UPI0003B6A169   R L N Y E C Y E V L A N K E I A R I A R E V Q E K Y H C S T V R I I H R V G M L
UniRef90_D7BJX4          S I D Y S A H P S A T G   I I Q R I A R K V A T E H G L H K I A V I H R Y G H L
UniRef90_Q46A64          K L E F E K Y E P E A S K T L D Q I R E E L K Q K E G I F E V L I H H K T G V I
UniRef90_D4U2B6          A I E Y S S H P S   S Q Q I L R D I V M E F K D R P G V H R I V A W H R V G Y L
UniRef90_W7ID24          S L T Y E G H P S A G D V L A E V A A D V A A T S P G V R A L A V S H R V G D L
UniRef90_UPI0003B424E5   Q L D Y E A H E E M A R E R M A A I L V E V L E K H G A C A A A A E H R V G E V
UniRef90_I1XGY5          T M T L E H Y P A M T Q R Y L E K L E K H A K T E W P L N D C L I L H R V G K V
UniRef90_UPI000462E808   A L E Y S A H P Q A   E T F L H R A C A E I S E S S G L   P V A A V H R V G P L
UniRef90_M7Y3Y8          E K E Y S A Y E E M A L Q K A F E I R E D I F A K Y P L T C M H I Y H S L G E V
UniRef90_U2G3Z6          S M D Y S A Y G P L A S K T L A D I Q A E A V E K F D A H A C R I Q H R T G R L
UniRef90_G7WND9          G L E V E A Y R E V A E E E L A R I R D E A M G T F D L K S V D V V H R V G R L
UniRef90_B2GCN6          T G E Y S A Y H P M A E R Q L E K L A E P I E Q Q   G A R V V I A H R T G E L
UniRef90_D5BGW5          A L F F E A Y E T M A L K E M E K I A A T A S K Q W N L N R L I M Q H A V G E K
UniRef90_N8WUU2          A L K Y T A Y P P V A E K M I R Q I E Q E I Q T K Y G V S Y V R V I H R I G A L
UniRef90_A0A059DN34      R L I L D H H P R M T V S S L E R I A R D G A A R F D I C A L S V V H R A G A M
UniRef90_B8IF61          G G E L E H Y P G M A E E E V G R V L A Q A A A R W P L D A A T V I H R H G L I
UniRef90_E1FIV8          R L E F E A Y D E M V Y K E L D R L C S E L R K S Y P V D K I A L F H K V G N V
UniRef90_H3FWS2          R L E Y E S Y D E M A Y K E M R K L C H Q T R R L F P V E R V V L F H R I G E V
UniRef90_W7DH83          T G D Y T A Y K E M A L K E L S K L A N E V E E K W D A D V I V I H R L G E L
UniRef90_W6M810          G M T L E H Y P G M T E R H L Q R I V T A A T D E W T L L D A L L I H R V G A L
UniRef90_A5FZJ9          S L I L E H Y P A M T E A S L A E I A K T A A N R W Q L T G C T I I H R V G E L
UniRef90_UPI00044333CA   S L E Y E D Y V P M A E A K V R K I C N A V R Q Q W P V K H I A I C H R L G L V
UniRef90_B1ZXL3          Q L E Y E A Y A E L A E R E G A K I L A E A R A R F S V L G V A G I H R V G L L
UniRef90_E4ZUS5          S L A Y T S Y T P L A L S T L F K I A S T I L A K H Q C T K I T I V H R L G E C
UniRef90_E6WUT3          G L C Y E A Y A S L A V A E G E R I V E E A V Q R F A I A G V H C V H R V G E L
UniRef90_Q2FMJ8          G I E L D V C E E V A L S D L N T I A K Q A T A D Y H L N T V D I V H R V G R M
UniRef90_D5EAP4          M L E F E K Y E T V A D E R I E K I C N D L K Q R E G I I E V L I H H K S G R L
UniRef90_Q56210          G I T Y Q S F Q P L C R T V L T E I C Q E A E Q V F G E L R I Y V Q H R L G E T
UniRef90_N8UUH8          A L K Y T A Y K P I A E K M I R E I Q E E V K N K Y G V S Y I H V I H R I G S L
UniRef90_C1C0B0          K L F Y E A Y K P M A I Q E L K R I C S H M R S K W D L G P I R I V H R L G D V
UniRef90_UPI0003A5ED9C   G L R Y E A Y A S L A Q A E G Q R V L D D A L A R F P I L A A H C V H R V G E L
UniRef90_UPI0003F5A5D9   A L S Y S A H P T V   E R E L R A V M E K V A A D F P V R A L A A L H R V G D L
UniRef90_T1G0P9          K L S Y E A Y A G M A E K E L K K I C E H M R E K W N I L K I Y V E H R L G E V
UniRef90_G3PRZ8          G L E Y E A Y E L M A Q S E F S K L C D D I R A R W P V T H V C H H R L G W V
UniRef90_F2KNM8          R L E Y E K Y D E L Y T E K L I D I E E K L K S Y P G V V E V K I H H R D G I L
UniRef90_F0XJ41          T L C Y S A Y R P R A L R S M R E I A A D I R T R H G L L S V A I V H R L G P V
UniRef90_R7XZ88          S L D Y S A H P T A   L A R L R D V C D R V A G A H D V H G L V A V H R V G H L
UniRef90_UPI0003B732D5   R L D Y S A H P S A   Q Q V L T D V A T T I A A K H P T V R I Y A A H R I G S L
UniRef90_I3BTA0          E M Y L E Y Y P G M T E R Q L V Q L A G N A Q Q E W S L D N V L I V H R V G K I
UniRef90_UPI0004782B41   A L D Y E G H P S A G   S V V E K V A A E I A G R F G V T A I A V S H R V G P L
UniRef90_UPI00042611DD   S L E Y S A H P A A   Q R I V Q E I A D A V Q H K Y Q L H G V A I V H R I G H L
UniRef90_UPI000404990E   A L H Y E G H P T A G A V L A D V V S E V A A R R A G V R A V A V S H R V G D L
UniRef90_C2QEV0          H L E Y E A Y K P M A V K Q F T R I G E E I N E K W P D A I V A I T H R V G R L
UniRef90_D2B0I1          R L S Y S A H P S A   E D E L R R V A E K V A T D F P V T A L A A V H R V G D L
UniRef90_V2UWF4          A L C Y T A Y A P L A E K M I R Q I E Q E V Q A K Y A V Q Y V R V V H R V G K L
UniRef90_UPI00047990AB   E L E Y V G H P T A T E V I V E L A E E F A A R P G I H A V A V S H R I G L L
UniRef90_UPI0004117763   H A H Y Q A Y P A L A D S E G E A I L A E A L S R F D I L D A R A V H R T G D L
UniRef90_L8P9C9          A L G Y S C H P T A   E A E M R R V A E K V V V N H P V R A L A A V H R V G E L
UniRef90_N9CBD6          A L K Y T A Y A P V A E K M I R Q I E Q D I Q L K H A V S Y V V R V H R I G A L
UniRef90_W6MQU8          S L S Y E A H R P M A L R S L V K I S N E A I T K F S V Q K V C I C H R L G T V
UniRef90_UPI000372C352   A L E Y D C A P D L A R R V L M S I A T E A L D R W N L R L V S V H H G Y G R V
UniRef90_UPI0003715A7C   A L T L E H Y P G M A E E E I G R L M E Q A R A R W P L V G A T V I H R Y G R M
UniRef90_A9WQ17          A L S Y S S H P S A A Q V F A E V V Q Q I A T E F P G T R L W A Q H R T G S L
UniRef90_F7VXS5          H L S Y T S Y A P L A L G T M L T I C R S I L V K H G L K G I A M V H R L G V V
UniRef90_F0BAK5          G L R Y E A Y A A L A Q A E G Q R V L D E A M G R F A I V H A H C V H R V G E L
UniRef90_J9YZ44          G I F L E C Y E D L A Y N Q L N K I K E D S V K K W N L S D C T I I H R I G D L
UniRef90_F4CF39          A I E Y T T Y E D L A F T K M S E I R E A I F E K Y P L T C M H V Y H S T G T V
UniRef90_UPI00041E13BE   G L T Y E G H P S A K D V I A E V A A D L A K T E G V R A I A V T H R I G D L
UniRef90_Z9JVR9          S L D Y S A H P L A Q Q A L A E A A R D V A A S H E D V L I A L A H R I G P L
UniRef90_A0A044SHD6      R L E F E A Y D E M V Y K E L D R L C D E L R R S C P V D R I A L I H K V G K V
UniRef90_S2WDW1          S I E Y S S H E I A S   T V L H E I A E E I A G R D G V H A V S A V H R V G N V
UniRef90_UPI000420F8BF   R L S Y S S H P T A G A V I A A I A D E V A A S H P G I R L W V G H R V G I V
UniRef90_R8BHE3          E L Q Y S A Y K P M A L R T M M K I A Q D I Y S K H S L K G V A M I H R L G I V
UniRef90_A6E7T1          A I E Y T A Y E E A A L E K M H E I R E A I F A K Y P L S C M H I H H S L G T V
UniRef90_E8MY42          R L E Y E A Y V P M A E A K M R Q V A E E I R Q R W P V E G I A I V Q R I G L L
UniRef90_D3Q467          K L H Y E G H P D A S   R V L A E V A A E I A A L E G I A A V A V S H R V G D L
UniRef90_UPI000373D250   G L G Y S C H P S A G E   E L R R V A E K V V A D Y P V R A L A A V H R V G D L
UniRef90_UPI00047AC92F   S L S Y S A H P S A   E R I I R E V A E E I A A Q H D G V R I W V A H R I G P L
UniRef90_Q9HI65          A L F Y E S Y R E M A I R E I R D M I E Y C I R Q F G I T D A A V H R I G R V
UniRef90_Q55371          S L E Y Q V Y R E L A I N E G F K I I A E A K E Y D L H Q A I A V H R S G H L
UniRef90_D7W1D1          A I H F T A Y K E M A L E K A H E I R E E I I A K Y G L T C A H I Y H S L G E I
UniRef90_Q0W297          A L E F E S Y D V V A K E R I A K I E A D L K Q A P G I V D V I H H K T G R I
UniRef90_F1Z790          A L V L E I Y R G M T L R S M E E I V A T A R E R F A I G R A C V V H R H G R I
UniRef90_UPI00036A8FDF   S L L Y E I P S A P E Q L R L I T E A L G Q F D I L R V A V A H R F G D L
UniRef90_Q2FSH4          G M D F E T D I D E A E K E L G I I V K E A D S R W G P I R A Q V T H R Y G R M
UniRef90_J3JIF8          G I G Y S C H P T A G Q I V K E I A R D V A E R G Q V R A L G V V H R V G D L
UniRef90_UPI0004161F2B   A I E Y T A Y E L M V E E K M A V I R E Q F F E K Y A L T C M H I H H S L G R V
UniRef90_UPI0003719292   A I E Y T T Y D D L A L Q K M H E I R E A I F A K Y E L T C M H V H H S L G E V
UniRef90_UPI00037BC90F   G L G Y S A H P S A L E R L R E V C E R V A A D H D V Q V A A V H R V G D L
UniRef90_H1UYK8          F G D Y S A Y T P L A L R T M L S I S K S I L E R H G L K G V A M I H R L G T V
UniRef90_M1XK72          Y L E F E K Y D G V A E R R M D A I E A E L E E R D G I L D V R L H H R T G R V
UniRef90_E9T3N7          A L E Y Q A H P D A   E R F L R R C C E E V A E R T G L   P V A A A H R V G S L
UniRef90_A8LED5          E L D Y S A H P S   G A A E L A R V A G E L L A E V A A T L D G I R T V A V H R T G S L
UniRef90_U5T0Y2          D I E Y S A Y A P L A E R A L A T V E S E A L S R F D I I S C A I R H R T G R L
UniRef90_D3F0J3          A L V Y E A Y T E M A L E Q I A A I V A E A I A S H G L C A A A A E H R I G A V
UniRef90_S2ZM09          K L T Y S A H P S A   E K I I A E V C C L E G E K Y A L H G I A V E H R T G D L
UniRef90_W3WV14          E L Q Y S A Y A L A L R T M L S L C Q N I C T K H G L A V H R L G T V
UniRef90_UPI0003B35290   S I D Y L G H P T A S D V M A Q V V A E F A G R Q G V H A I S A E H R V G S L
UniRef90_E1IIL5          S E N Y E A Y T D M A T A V L V Q L A G E A H Q R W P I G R V A I H R L G R L
UniRef90_UPI0002DACB72   A L E Y S A H P D A A E V L R T I A E K V A A E H G L V A V S H R T G H L
UniRef90_UPI00036C5C74   S K N F E H Y P K M A E K K L E R L Q A I K D Y G L I E M I I I H R I G T V
UniRef90_UPI0003B333A0   H L E Y V G H P D A P A V L E R I A T E V A A A H P A V T V A A S H R V G T V
```

```
                                                90              100             110            120
UniRef90_UPI0003B6A169   E V G E I A V A I Y V S S A H R D E A F R A C R E T I E R I K Q T V P I W K Q E
UniRef90_D7BJX4          E V G D I A L G V A V S S D H R K E S F R A V E D L V E R I K L E L P V W K K Q
UniRef90_Q46A64          K A G E D I V Y I V V T A A H R G E L F S A L S E A I E R I K A E A P I W K K E
UniRef90_D4U2B6          E I G E D A M V V V A A H R A Q A F R A V E A I V E D V K A K L P I W K K Q
UniRef90_W7ID24          A I G D T A L A V A V A A D H R G A A F A T C A R L V D E V K S R L P I W K H Q
UniRef90_UPI0003B424E5   P W P E A A V V V A V S A P H R G E A F A A A R E A L D R I K A E A P I W K Q E
UniRef90_I1XGY5          F P G E A I V L I A C W S A H R R A A L D A C N W L I E E L K Y K A P F W K K E
UniRef90_UPI000462E808   T I G D L A I A V A V A A P H R A E F G A C A E L V D R I K H E V P I W K R Q
UniRef90_M7Y3Y8          K V G E I C L F V F T S S K H R K A A I D A C E E L V E R I K K E V P V W G K E
UniRef90_U2G3Z6          G L G E V S V Y V V V R A V H R D A A F E A A R Y A L E E L K A R V A V W K N E
UniRef90_G7WND9          G V G E D I V L I V A T A P H R Q A A F R G C E F V L E E I K R R A P I W K K E
UniRef90_B2GCN6          Q L T E E A V F V G V A A A H R G D A F K W C Q Y L I D T L K Q E V P I W K Q E
UniRef90_D5BGW5          K I E E P V V L V G A S S A H R N D C F E A C R F L I D T L K E K V P I W K K E
UniRef90_N8WUU2          D I G E K A I I A I A Y A A H R R E A F A A C E E A V E R V K H E V P V W K E E
UniRef90_A0A059DN34      A P G E I I V L V G V A S D H R R A A F Q C A D Y L M D R L K T E A V F W K R E
UniRef90_B8IF61          R P G E G I V L V L T A S A H R A A A F E A A S F L M D Y L K T R A P F W K R E
UniRef90_E1FIV8          F V G K A S V I M A V S A P H R Q D A F Q A T E R G I D Y L K S R V P I W K K E
UniRef90_H3FWS2          A V G E I S V I I A T A S P H R T D A I R A T E W A I D E L K R R V P I W K K E
UniRef90_W7DH83          Q L T D I A V F I G V A T P H R A A S Y E G S R F I I E E L K K R V P I W K K E
UniRef90_W6M810          Q P N D P I V L V A V W S A H R A E A F A A C R A I M E E L K S K A P F W K R E
UniRef90_A5FZJ9          T P G A R I V L A A A A S A H R A D A L A A T A F L I D W L K T D A P F W K R E
UniRef90_UPI00044333CA   P V T E A S V V I A V S S A H R A A S L E A V K Y I I D I L K A K V P I W K K E
UniRef90_B1ZXL3          Q I G E L A M W V G V V A A H R G A A F E A C R Y L I D E A K A R L P I W K K E
UniRef90_E4ZUS5          P V A E E S V V I A V S A P H R Q A A W R A G E A L E E T K K R A E I W K L E
UniRef90_E6WUT3          P I G G L A V W V G A S A A H R D A A F D A C R Y V I D Q V K A R V P I W K H E
UniRef90_Q2FMJ8          E L T E T I L V I V V G V S H R Q E G F A A C S W L L E Q I K A F V P I W K K D
UniRef90_D5EAP4          M R G E D I V Y I V V A S A H R Q E L F K A L S D A I E R V K S E V P I W K K E
UniRef90_Q56210          R V G D P T V L I G V G A I H R D E A C E A C R Y I E E L K H R A P I W K L E
UniRef90_N8UUH8          D I G G K A I I A V A Y A P H R K E A F M A C E E A V E R V K H E V P V W K E E
UniRef90_C1C0B0          P V G E V S I I I S V A A P R R D S A I R A T E F A L E K L E L K V P I W K K E
UniRef90_UPI0003A5ED9C   A I G D M A V W V G V S A A H R G A A F E A C R F I I D E V K A R V P I W K H E
UniRef90_UPI0003F5A5D9   R I G D L A V V V A A S C P H R A E A F E A C R R L I D D L K A H V P I W K H Q
UniRef90_T1G0P9          P V G E V S V I I A V S A I H R A D S I Q A V E Y C I N N L K L T V P I W K K E
UniRef90_G3PRZ8          K V G E A S V V M A I S S P H R H D G Q Q A I W H C I E Q L K A N L P I W K K E
UniRef90_F2KNM8          K P G E D I V Y V I M G G H R K D V W K P L E D S M E L I K K E L P I W K K E
UniRef90_F0XJ41          P I G E D S V I I A V S A P H R K A A W Q A G E E C L E R V K E R V E I W K Q E
UniRef90_R7XZ88          E I G D I A V I V A T T A S H R G V A F D A S R A L I D T L K S E V P I W K H Q
UniRef90_UPI0003B732D5   Q V G D H A L V A A V A S A H R A E A F E A C A E L V E T I K A E V P I W K K Q
UniRef90_I3BTA0          T P S Q A I V L V A V W S A H R A E A F E A C R H M M E V L K H T A P F W K R E
UniRef90_UPI0004782B41   A I G D V A L A C A V A A E H R R E A F D A C S E L V D E V K R Q L P V W K R Q
UniRef90_UPI00042611DD   N I G E T A L A V A V S S S H R Q E S F A A I V D E V K Q Q L P V W K K Q
UniRef90_UPI000404990E   T I G D V A L A C A V A A D H R A E A F T T C A D L V D E V K A R L P V W K H Q
UniRef90_C2QEV0          E I M D I A V V I A V S S P H R K V A Y E A N E Y A I E R I K Q I V P I W K K E
UniRef90_D2B0I1          E L G D I A V I V A V A C P H R A E A F A A S R R L I D D L K S E V P I W K N Q
UniRef90_V2UWF4          G I G G K A I I A L A Y A E H R R E A F A A C E E A V E R V K H E V P V W K E E
UniRef90_UPI00047990AB   G I G D V A L A C A V S A S H R G E A F A A C E E L V D E V K K R L P I W K R Q
UniRef90_UPI0004117763   A I G D P A V W V G V I A A H R G P A F D A C R W I I D A L K E R V P I W K R E
UniRef90_L8P9C9          A V G D T A V V V A V A C P H R Q D A F A A C R Q L I D G L K H E V P I W K H E
UniRef90_N9CBD6          E I G D T A I I A V A Y A P H R R E A F A A C E E A V E R V K H E V P V W K E E
UniRef90_W6MQU8          P V L E E S I V I A L S S T H R K E G W E A A M Y L E R I K E S V E I W K S E
UniRef90_UPI000372C352   N V G E V G V L I A V G A A R R N E A Y E A S R Y L I E E V K R R P V W K C E
UniRef90_UPI0003715A7C   V P G D N I V L V V T A S A H R A A A F E A A E F L M D W L K T R A P F W K M E
UniRef90_A9WQ17          Q I G D P A L C A V A A A H R G Q A F A A C S A L V D R V K A Q V P I W K E Q
UniRef90_F7VXS5          P I G E E S I L I A V S S P H R Q A A W R A G E E A L E E C K A K V E V W K R E
UniRef90_F0BAK5          K I G D M A V W V G V S A A H R G A A F D A C R Y I I D E V K A R V P I W K H E
UniRef90_J9YZ44          R I S E K I V L V I A A A P H R S D C I E A C E Y I I D T L K A N V A L W K F H
UniRef90_F4CF39          Q V G E I C F F V F V S S S H R K A A I A A C E E L V D C V K T E L P I W G K E
UniRef90_UPI00041E13BE   A I G D V A L A C A V A A E H R A Q A F G A C A R L V D E V K A R L P I W K H Q
UniRef90_Z9JVR9          R I G D T A L A C A V A A P H R K L A F S A C D A L V D E V K R R V P I W K H Q
UniRef90_A0A044SHD6      L V G E A S I I M A V S A P H R K D A F R A T E K G I D Y L K S R V P I W K K E
UniRef90_S2WDW1          R V G E T A M V V V V A A S H R S M A F S A T S D F V D E I K A R V P V W K K Q
UniRef90_UPI000420F8BF   R I G D P A L V C A V A S A H R A E A F D A C A T L V E E L K A E V P I W K E Q
UniRef90_R8BHE3          P I G E E S I L I A V S S P H R K A A W S A G E E A L E E V K A K V E I W K Q E
UniRef90_A6E7T1          K A G A I C L F V F T S S A H R K P A I D A C A E V V E R I K T E L P I W G K E
UniRef90_E8MY42          D A G T P T V L I A C T A A H R D T V F E A A R Y G I D R L K E I V P I W K K E
UniRef90_D3Q467          A I G D A A L V A A V A G P H R A E V F A A C A R L V D E V K A R L P I W K H Q
UniRef90_UPI000373D250   R V G D L A V V V A V S C P H R A E A F A A C R K L I D D L K H E V P I W K H Q
UniRef90_UPI00047AC92F   G I G D N A L V A A V A A G H R G E A F T A C S D L V D T V K E R V P I W K E Q
UniRef90_Q9HI65          N L T E D S V V I A V S A P H R G Q A F D A C R Y I I D Q I K E R A P I W K R D
UniRef90_Q55371          K I G E T A V W V G T V A S H R Q A A F Q G T Q Y V I D Q I K L R L P I W K K E
UniRef90_D7W1D1          K V G E I C L F V F T S A A H R K E A I N A C D E M V D R I K K E V P L W G K E
UniRef90_Q0W297          E A G E D I V Y I V V A A G H R Q E L F P I L R E A I E R V K E E V P I W K K E
UniRef90_F1Z790          L P G E P I V L V A V A A A H R R A A I S A M D Y I M D R L K S D A V F W K R E
UniRef90_UPI00036A8FDF   A I G D T A F A V V A S A A H R D A C A I V D E V K A K L P I W K H Q
UniRef90_Q2FSH4          H I G E V I V L I A V A A G H R N E A F L A A R Y I I D E L K T R V P I W K A D
UniRef90_J3JIF8          A V G E A A L A V A V S S D H R A E A F A T C G E I V E E V K K R L P I W K R Q
UniRef90_UPI0004161F2B   A V G E I C L F V F T S S A H R R D A I D A C S E M V E T I K K E L P I W G K E
UniRef90_UPI0003719292   K T G E I C L F V F T S S K H R K T A I N A C E E V V E R I K A D L P V W G K E
UniRef90_UPI00037BC90F   S I G D I A V V V A A S A G H R A A S R D L I D T L K Q T V P I W K H Q
UniRef90_H1UYK8          P I G E E S I L I A V S S P H R Q A A W R A G E E A L E E C K A K V E V W K R E
UniRef90_M1XK72          P D G E D I V F V V V L A G H R R E A F R A V E D G I D R L K E E V P L F K K E
UniRef90_E9T3N7          V I G D L A L V A A V A A P H R A E A F A A C A E L V E R I K A E V P I W K R Q
UniRef90_A8LED5          R V G D L A V V T A V A G A A H R A E A F T A C R R L I D D V K A R V P I W K H E
UniRef90_U5T0Y2          A V G E L S V V V V V R A A H R A E A F D A A R F A I D R L K A T A P V W K K E
UniRef90_D3F0J3          P L S E P S V L V A V S A P H R P E A F L G A R E I I D R I K A A A P I W K Q E
UniRef90_S2ZM09          A I G D T A L G A A V S S S H R H D S F D A L T E L V D E I K A R L P I W K Q Q
UniRef90_W3WV14          P I G E E S I L I A V S S P H R Q A A W R A G E E A L E E C K A R V E W K R Q
UniRef90_UPI0003B35290   V V G D V A L Y A V A V S S A H R G Q A F A A V S E L V D E V K A R L P I W K K Q
UniRef90_E1IIL5          N I G E T A V L V V A A P H R E A A F A A A A Y M M D R I K E V A P I W K K E
UniRef90_UPI0002DACB72   R V G E P A I V A A V S S E H R A A A F D A C R A L V E A V K A E L P I W K K E
UniRef90_UPI00036C5C74   D I G E N I V L I V A A A G H R K E T F A A C E W A I A E L K R T T P I W K H Q
UniRef90_UPI0003B333A0   L V G G L A I V V C A A S A H R V E A F T A C R E L V E R I K A E L P M W K K Q
```

```
                          130                    140
UniRef90_UPI0003B6A169    F Y Q D G S E W V
UniRef90_D7BJX4           E F T D G S Q W
UniRef90_Q46A64           F T E K E E F W V H D R E H H E
UniRef90_D4U2B6           E L T D G S H
UniRef90_W7ID24           R F T D G D E W V N C
UniRef90_UPI0003B424E5    V D G E E R A W V A G
UniRef90_I1XGY5           Q N Q Q G A R W V E S N
UniRef90_UPI000462E808    L F A D G S E W V N A C
UniRef90_M7Y3Y8           I V E N G D V W K E N R
UniRef90_U2G3Z6           Y Y A D G S
UniRef90_G7WND9           I R I D G E R W V
UniRef90_B2GCN6           F D T D K V R W G E
UniRef90_D5BGW5           F F E G K E Q W V T P H
UniRef90_N8WUU2           F Y M D G S Q Y V E G C
UniRef90_A0A059DN34       Q G P F G E R W I E P T Q N D T E D R E R W
UniRef90_B8IF61           H L A D G T V W V E A T V Q D E A A A G R W
UniRef90_E1FIV8           V Y S D G T Y W K R N
UniRef90_H3FWS2           A Y A D G A A W K E N A D
UniRef90_W7DH83           V D T D R I R W G G E R D D A H
UniRef90_W6M810           E T T T G P R W V
UniRef90_A5FZJ9           N F A D G S H W V S A R D E D Q E A R N R W
UniRef90_UPI00044333CA    L Y E E E S S W K R N K E C
UniRef90_B1ZXL3           H Y A G G A T W I N C
UniRef90_E4ZUS5           R F E G G E V W R A N R D
UniRef90_E6WUT3           R Y T D G A Q W L H P D E
UniRef90_Q2FMJ8           I C K N G E S W H F S K E E
UniRef90_D5EAP4           V T M E G D F W V H D H A
UniRef90_Q56210           H Y E D G D S W V P G N C L C Q E R R S R
UniRef90_N8UUH8           F Y T D G S E Y V A G C
UniRef90_C1C0B0           F Y S N N S K W K A N Q K A P S K S A S
UniRef90_UPI0003A5ED9C    H Y L D G D A W L H P Q E
UniRef90_UPI0003F5A5D9    T F A D G D E W V G A C
UniRef90_T1G0P9           I Y N D D T G W K E N K E S C Q
UniRef90_G3PRZ8           V Y T Q E A S W K E N A E C P W S F Q K K
UniRef90_F2KNM8           V F T D G E H W V H
UniRef90_F0XJ41           V F
UniRef90_R7XZ88           R F A D G E E W V G
UniRef90_UPI0003B732D5    H F T G G S E W V G
UniRef90_I3BTA0           T L A D G E R W V E
UniRef90_UPI0004782B41    E F A D G E E W V N C
UniRef90_UPI00042611DD    Y F S D G T
UniRef90_UPI000404990E    W F A D G D E W V N S
UniRef90_C2QEV0           F W E D G T M W I G D Q
UniRef90_D2B0I1           L F T D G S E W V G A C E
UniRef90_V2UWF4           F Y S D G T
UniRef90_UPI00047990AB    V F T D G E E W V A C
UniRef90_UPI0004117763    S Y G D G S E
UniRef90_L8P9C9           K F S D G D E W V G A
UniRef90_N9CBD6           F Y M D G S Q Y V E G K D H D E
UniRef90_W6MQU8           E Y A D G A T W K E N G K E H E K
UniRef90_UPI000372C352    V Y A D G E R W L E G
UniRef90_UPI0003715A7C    E R D D G K G W V A A K D E D D A A A E R W
UniRef90_A9WQ17           F F R D G S K W V G A Q E S A D S A
UniRef90_F7VXS5           E F E G G G V W R A N R D
UniRef90_F0BAK5           H Y L E G D
UniRef90_J9YZ44           I K G K E K K P V D Q K K K D L D K Y L S W
UniRef90_F4CF39           I F E N D T H W K V N K
UniRef90_UPI00041E13BE    R F T D G D E W V N C
UniRef90_Z9JVR9           R F A D G E E W V G A
UniRef90_A0A044SHD6       V Y S D D T Y W K G N
UniRef90_S2WDW1           N F P D G T H
UniRef90_UPI000420F8BF    F F T D G T E W V G
UniRef90_R8BHE3           M F G E E G V W R A N R D
UniRef90_A6E7T1           L F D N D T H W K E N
UniRef90_E8MY42           I G P H G E V W V E G
UniRef90_D3Q467           H F T D G D E W V N C
UniRef90_UPI000373D250    R F S D G E E W V G A C
UniRef90_UPI00047AC92F    F F S D G T E W V G A
UniRef90_Q9HI65           I
UniRef90_Q55371           H Y F D P A T W V Y C C H
UniRef90_D7W1D1           I L E D N S H W K E N K Q
UniRef90_Q0W297           M T V S G E Y W V H D K E
UniRef90_F1Z790           E T A L G S R W I E P T D T D Y S D K A R W
UniRef90_UPI00036A8FDF    K F T D G S E W V N C
UniRef90_Q2FSH4           V F N D K V A W I H G
UniRef90_J3JIF8           T F S D G S Q W
UniRef90_UPI0004161F2B    I C T N Q S V W K Q N N
UniRef90_UPI0003719292    I F E D E S H W K I N K
UniRef90_UPI00037BC90F    L F A D G E E W V G
UniRef90_H1UYK8           E F H G E E
UniRef90_M1XK72           V T D E E T F W V H Q R E
UniRef90_E9T3N7           T F A T G S E W V G
UniRef90_A8LED5           L F A D G S E W V G S C
UniRef90_U5T0Y2           T Y A D G S Q
UniRef90_D3F0J3           V E G G E A S W V A G
UniRef90_S2ZM09           F F P D G T E W
UniRef90_W3WV14           E F E G E E V W R A N R D G T Q
UniRef90_UPI0003B35290    Y L A D G S H W S E C
UniRef90_E1IIL5           Y W A N G E E W R A
UniRef90_UPI0002DACB72    I L A D G S H W V G
UniRef90_UPI00036C5C74    T T T T G E V W V
UniRef90_UPI0003B333A0    V L T D G S H W V G S
```

```
                                1        10           20           30           40
UniRef90_S3BRL5           C H V A L S E E P L D V A A I M Q R V R S   P K A G A N V L F A G S T R V A
UniRef90_M7NZ93                   P V F I A D S I S K H S V K K E I G A H S I   F L G Q V R V K
UniRef90_A3M680           R I Q E Q A L S L D T   F D P I Q S F P E C G G I D I F M G T V R V K
UniRef90_V9XDL3       S E L L A R I S S E P L D P A T V D A A V A G A   E H G A V V L F T G V V R V T
UniRef90_M0N563                       S L V Q D V K R S P N A D R A G A L A T F T G R V R V E
UniRef90_S5L2R8               V A L Q H E K I E I G P L S E K L I N K N   H G G T N L F V G T I R T E
UniRef90_F6BCP8             I K I T K E D F N V E E E I K K M L E K H   K N R N V G I K D G E E K V E
UniRef90_Q7URF3       V H V C L T D K P L E P T S S E E P W L A H P D A G A M L W F H G V T R T K
UniRef90_UPI000468236C                 I G N S I A H Q S K T S I G A H N I F L G Q V R V T
UniRef90_R7Z0P1           I R V E L T Y S P L S I T A N T N   F V K S P K A G A V V M F A G T T R V K
UniRef90_U1S271             I T E E P L D A T A L T N A   A R D P R C G A V A V F V G A V R V D
UniRef90_F0R9R9               I G E A I A K H Q S K T Q I G A H N I F L G Q V R V K
UniRef90_UPI0001FFDB75   R A A V G E E P L D V D E H   A R L V E H A A A G A V V T F A G V V R V H
UniRef90_K0YTE5             V T D Q P I D V A A L Q E A V R D   P Q A G A V A L F D G R V R V V
UniRef90_E2N4Z1               V A E S I A K H Q V K T Q I G G H S I F L G Q V R V S
UniRef90_E2A7T5                                                                     V I
UniRef90_UPI00047B8883           V R D E P L S V D E V M T A V S D R G   A G G T C V F V G T V R V T
UniRef90_W7BLZ1           I Q L Q E M P I H C S E L Y E Q L K E K   Q Y G G I V T F V G T I R E W
UniRef90_U7LWX3             L T E Q P L E P L A A A K A E V T T S A M G A V V T F E G I V R V T
UniRef90_C6W6E2                 V A R S I A S H Q S K T G I G A H A I F L G Q I R V T
UniRef90_A0A031JMT2         V R L L T S G F D P A A E L S A F A A H P Q A G G I V S F L G Q V R C E
UniRef90_A7IHU7         S V R I Q E A P F D A A A E A A R L A Q R T D V G G I V T F T G L C R A D
UniRef90_F2BDT7           F E L T E Y P I D A A A L R V R L L G N E N C G A F N S F E G W V R V E
UniRef90_D7GGL7       D I R T G I T S E P L D A A A I T Q A   A A D P R C G A L V T F A G V V R V Q
UniRef90_K2Q4H6               I A E S I A K H Q S K H S I G A H N I F L G Q I R V S
UniRef90_O28104                         E K C G A I G I F I G F V R V S
UniRef90_UPI00035D4377   D K R V R L R E T P L S V D E V L D A V R D   P D A G G I G L F V G V V R V D
UniRef90_U1ZXX7         V S A V L S A E P I S V D Q A I A A V   E S D T A G A V V S F S G V V R V D
UniRef90_A4XDF8             E V T E R P L D L A E H E G A V A D R   A A G A V V S F Q G V V R V V
UniRef90_E9CKC6       N T R I R V G E A P F S I G D E Y L W L A Q R D D D G A V V T F I G K V R V S
UniRef90_E1VSU0             I T E E P I D   E A A V R A A V Q S D T A G A L V M F H G I I R V N
UniRef90_I3Z5P3               I A K S I A N H S T K T D I G G H S I F L G Q V V R V T
UniRef90_Q4FU32                   L R D M L D D D S C G A F V S F E G R V R V D
UniRef90_D8J8R5                             R A D R A G A I A T F T G R V R T E
UniRef90_B3EPC1         V S V A I T E D R I D   D W I F D V P R N P D A G A E L V F T G L V R D S
UniRef90_K1LJ65                 E G P I S P E K I I A N H S S K T D I G G H S I F L G Q V R A D
UniRef90_UPI000440804A       L T Y N P L N P L A I I D S V   G S D E A G A K A I F I G T T R V T
UniRef90_A0A010Q4G3           R L S D E P L S P A E A E A E   V W A E R A G A V V G F S G I V R V H
UniRef90_UPI000364B3DF   S I K L T L E P I V E S S L I A E R K M S R E M G A V N Y F S G I V R I K
UniRef90_UPI00037D5539                 N A N C G A L A T F E G W V R V T
UniRef90_UPI0003699727       R L T D R P L S V D E V L T A V T G P G Q G G T V V   F I G T V R V T
UniRef90_UPI00036E5AE1   V K I E E E K I S   S E K A K T F I A S E K N G A E S I F I G R V R V T
UniRef90_C2TN31
UniRef90_M0H7S3                       S L V E Q V K R D P R A D Y A G A I A T F T G R V R T T
UniRef90_T0ZMZ0       M S V R L S A R P L S S V R A L K E L G A S G L   G G I V L F V G R V R I R
UniRef90_H2CEI6             I S A D P L E L P A L V G R Y H D   P A A G A F V F F S G E T R V Q
UniRef90_J3JEA5                   L V E Q V R Q S P R A E R A G A I A T F T G R V R T T
UniRef90_W9GEQ7           E I R E T P L S V D E V L R S V S D   P Q A G G L C L F V G T V R V E
UniRef90_G0L7E3                 I A E S I A K H Q S K T S I G A H N I F L G Q V R V A
UniRef90_S3CWV6         V A L T H D T L D A K P I M D R V R S   P K A G A I V L F A G T V R V K
UniRef90_H2BW33             A P E K I A Q S I A S H Q S K T N I G A H S I F L G Q I R V S
UniRef90_UPI0003B2EC4A   M L A A I R S T P I T V   E E V A A F V G S P A D G A V V T F A G V V R V T
UniRef90_F4D0R3           R A T V G E E P L D V   E E H A R L V D R A E A V A G V V T F A G V V R V R
UniRef90_Q4JTT7             I S I Q P L D   A Q A L E E L A E D E R C G A T V V F R G V V R V A
UniRef90_M0P8Z0                             A D A D R S G A I A T F T G R V R T T
UniRef90_Q9HST6                     S L V A S L K S H E D S E F A G A I A T F T G V R V R T Q
UniRef90_UPI00037DB25A     V R V T Q E V L D V G R A V E A A V A A P E C G A V V T F R G V V R V T
UniRef90_Q00TR4       I R V R I L T E P I D E R E S I E   F V R S P L A G A I S T F I G T A R V L
UniRef90_X4QZP1             V Q D T P L D T P T   I A D S I R N D A A G A L V V F E G I V R V L
UniRef90_UPI0003FD8084   K V F V Q   G P I S P D K S I A S H Q S K T T I G A H A I F L G Q I R V T
UniRef90_E2SEB6           I G I R D T P L S I D E V F A A V R D   P A A G G V C L F V G V V R V T
UniRef90_D4GSW7                               A G A I A T F T G R V R T L
UniRef90_H8L0Y7       D T A A R I C A E P F P I E P L L   A L D R Y P E C G G L A S F V G T V R V E
UniRef90_U1PNA3         V H T G I V S A P L D A A A I H A A V H D   E R C G A T A V F L G T I R V V
UniRef90_UPI000374EB30       V T E E P L D H A R A V E A V   Q D E R T G A V V S F S G V I R V T
UniRef90_S3Z3L0       E D R V R V S G E P V A V A D M V R C V E D R   R C G A L V T F D G L V R V V
UniRef90_Q05V01           V V I H R Q P F N P W S A L E A W L   P E A A N A V F L G R V R L D
UniRef90_I0GI88           V K L T K D K I N   E F E L T E L L R N D E A G S I V V F L G E P R V S
UniRef90_T0MTE9             I Q R E S I D A S K L L E   L R E L N V G S T V T F Q G I V R D T
UniRef90_UPI0004415E4C       A L T F D A L D   A Q A I A A S V L R P S C G A T A L F V G T T R D S
UniRef90_H0K620             S V G E E P L D P T L A L R T V   Q G E T A G A A V L F S G V V R
UniRef90_I4F5B2             R V T E E P L S V A E H E A A V A D K A A A G V V R D H D G G R S V T
UniRef90_W7HZW9         V G L T Y D K L D I T S A I D R V R S   P K A G A V V V F I G T T R D T
UniRef90_F6EM73         R A A V T E A R L D V T E H   E A L V A D R A A G A V V S F A G V V R V A
UniRef90_C7NNK0                       S L V A E V K R S P D A D R A G A I A T F T G R V R T E
UniRef90_L8DK20       S E L V A R I S S E P L S T A E V E A A V   Q D S R H G A V V L F S G I V R V E
UniRef90_UPI0003B5CE5F   K V R I A V V E H V L D V D A H S A A V R D R G   A G A D V T F C G V V R V V
UniRef90_C5GCQ5       A N I H L E L T Y S P L N P T R S I   I H V R S P H A G A N I L F L G T T R S T
UniRef90_UPI0004712A2C           L V H G P I S V D S I A K H Q S K T D I G A H S L F L G Q I R V T
UniRef90_Z5X2U9             R A A L V E G P I S L T E H   E E L V A D E A A A V G F S G V V R V L
UniRef90_E5XUP1           R A A V G E E P L S L A E H E A L V A A D G H A G A V V S F S G N V R V L
UniRef90_D5VBH0         H V A I T D D T F I D E K K L K K G L L D D R C G A L V T F E G W V R V E
UniRef90_G0S1M5         C Y V A L T H A P L N V Q S I M D R V R S   P Q A G A I V L F A G T T R D S
UniRef90_UPI000255C936   V H A R L S A E P L D V A A A H A E V W A S T   A G A V V D F A G I V R V E
UniRef90_A0A039JRF7                                                                 V T
UniRef90_Q3AGA5       D C R V E V C P D P F D P W Q Q L A L W S G D A A A A A I   F I G R V R L E
UniRef90_UPI0003609D49   V H A V L S A E P I S V E Q A I A A V   E S D T A G A V V I F V G R V K V S
UniRef90_G4RP93             D L N K E V E D I I K G T A A G G V V I F V G F V K V S
UniRef90_C7P0R6                       S L V A R V K A S S D S D R A G A I A T F T G R V R T E
UniRef90_H0QIA4               L S S E P I S V D Q A I A A V   E S E T A G A V V S F S G V V R V D
UniRef90_D0KV26                   F D L L E I R K F R E H V V G F V V Y V G F V V R V F
UniRef90_U1NG57       A E P Y I T L S T   L V E R V K A S S E A G R A G A L A T F T G R V R T V
```

```
                              50              60              70              80
UniRef90_S3BRL5      T L R Y A A Y Q P R A L Q S M R D I A A S I R L K H N L T A I A I V H R L G P V
UniRef90_M7NZ93      A I D Y T A Y T D M A E E S L H S I R E W A F G Q Y N L T C M H I Y H S L G R V
UniRef90_A3M680      A L K Y T S Y K P L A E K M I R E L E L E I E K K Y Q V S Y V R V V H R I G Y L
UniRef90_V9XDL3      A L Q Y Q A H P D A   E T F L R R C C E D V A A K S G L   P V A A V H R V G D L
UniRef90_M0N563      A L E F E T Y R E V A D E R L H A I E T E L E A R E G V H E V L T H H R V G R I
UniRef90_S5L2R8      E I R Y T S Y E E M A L K E L N K L A A E V E T K W G   A D V V I V H R L G L L
UniRef90_F6BCP8      K L E F E C Y E K M A I K L E E I R E E A M K K Y D I I D A I I H R I G T L
UniRef90_Q7URF3      E L S Y T A H R E M A V K Q L R E L A H D A V R E F T L H R V V I W H R L G V V
UniRef90_UPI000468236C A I E Y L A Y E E M A E A S F H S I R E S A F E K Y D L T C M H I Y H S L G K V
UniRef90_R7Z0P1      S L T Y Q S Y P P L A L R T L F S I A S E V K A K H D L T A I S I I H R L G T V
UniRef90_U1S271      A I E Y S S H P S S P Q V L H S L A D R L A E R A G V H V V V A W H R V G R L
UniRef90_F0R9R9      A I E Y T A Y E E M A N L K F H E I K E N T F S K F N I T C M H I Y H S K G I V
UniRef90_UPI0001FFDB75 G L E Y S A H P T A G   R I V A E V A E Q V A A R S G V R A L A V S H R I G P L
UniRef90_K0YTE5      S I D Y E A H P D A G   K V V E R I A K A C A K G S G A A K L A I A H R Y G H L
UniRef90_E2N4Z1      A I E F T A Y E A M A N E K A A E I R E E I I V K Y G L S C A H I H S L G E I
UniRef90_E2A7T5      K L E Y A Y E S M A L K E M M N I C I K I R S K W N I E S I A I Y H R V G E V
UniRef90_UPI00047B8883 S L D Y E A H P T V T D   T L R A V A E K V T A D V P V R A L A A T H R V G H L
UniRef90_W7BLZ1      T G D Y S A Y E E M A L K E M H A L A A K I E A   H G A K V I I V H R L G L L
UniRef90_U7LWX3      Q L S Y S A H P S A P E K   L R E I V D E V A G Q H P V R   L W S A H R T G D L
UniRef90_C6W6E2      G I D Y T A Y E E M A E Q A F H D I R E A A F A R F E L S C M H I Y H S L G L V
UniRef90_A0A031JMT2  A L E L R H Y D P L T L P A M Q D L A M R V R G R W A L D G L L V I H R S G V M
UniRef90_A7IHU7      A G T L E H Y P G M A E E E I E R H V A E A R A R W P L L G A I V V H R H G R L
UniRef90_F2BDT7      Y L V Y S T Y R E L A L N A G N A V I E E A K R R F A I A D A V C V H R Y G R L
UniRef90_D7GGL7      A I D Y S A H P S A   E R V L A R I A A G I G E R D G L G R I E A W H R I G H L
UniRef90_K2Q4H6      A I E Y T T Y Q G M A D Q K L Y E I R E E A F E K F D L S C M H I Y H S L G R V
UniRef90_O28104      R L E Y E A Y D E M L N E K A R E I E E R V K Q M P G I V N A R V Y H K R G I L
UniRef90_UPI00035D4377 A L D Y S A H P T A   E S L L Q Q T A Q Q V L   R E D I T A V A V T H R T G H L
UniRef90_U1ZXX7      R L S Y S A H P T A H E V V A A L V A E H S G E A Q Q P V R I W A A H R V G S L
UniRef90_A4XDF8      A L T Y E G H P S A   E R V L R E V A A E I A A D P E V Y A V A V S H R V G P L
UniRef90_E9CKC6      A L T L E H Y P
UniRef90_E1VSU0      S L D Y S H H P Q A Q E   F L E K I I A E E E E R T G L   K V S A V H R V G P L
UniRef90_I3Z5P3      A I E Y T A Y E D M A L Q Q A F E I R E A I F A K Y P L T C M H I Y H S L G E V
UniRef90_Q4FU32      R L S Y Y G Y E L A V N Q G R Q I I E K A K N K F D I T H A I A I H R I G A L
UniRef90_D8J8R5      F L E F E T Y E G V A Q Q R F T T I R E E L E A R E G I Y E V L M H H R T G V I
UniRef90_B3EPC1      E K V Y E H Y A G M A E K E L E R I G R E V I G R F G I H S L H C I H R V G S I
UniRef90_K1LJ65      E K E Y T A Y E E M A L E K A Y E I R E A V F S K Y P L T C M H I Y H S L G E V
UniRef90_UPI000440804A R L E Y Q A Y S K L A I K T M A D I V H A A R T A S C L I R C V H H R L G P V
UniRef90_A0A010Q4G3  R L S Y T A H P S A A E   A I A Q V A V D V A A R F P T V R W V A H R V G E L
UniRef90_UPI000364B3DF A I K Y E A F E K M V L H Q F D L I L N E I E E R W P I E S I R L V H R T G K V
UniRef90_UPI00037D5539 H L T Y Y G Y E K L A I N Q G K K L I D E A K Q P D I E H A V A I H R I G D L
UniRef90_UPI0003699727 R L E Y E A Y P S L A L K V L T D I I R R C E A T A P G V R V A V A A H R T G R L
UniRef90_UPI00036E5AE1 A V T Y D A H D Q A V I K S F Q S I C N D A K N K F D N A K I F L E H A K G Y A
UniRef90_C2TN31                          M A E K M L E K I G S E V K E K W P G T H V A I T H R I G T L
UniRef90_M0H7S3      S L E Y E K Y D G V A E S K M A T I S E E L E D R D G V E R V L M H H R V G V I
UniRef90_T0ZMZ0      A L A Y E S H R T L A L E E L Q A L E T E A R E R Y G V G R I V I V W H R I G T V
UniRef90_H2CEI6      T L F Y E A H E S L A E R L I R S I I D E A V K R H E L K Q A F A V H R I G E V
UniRef90_J3JEA5      H L A F E K Y A G V A E D R M A T I S E E L T T R E G V E E V V M H H R T G V I
UniRef90_W9GEQ7      R L D Y S A H P Q A A   A L T R A L A E R L D S A G R T V R I G V V H R V G R L
UniRef90_G0L7E3      A I E Y T A Y E D M A N K K F H E I R E A T F E K F N L S C M H I Y H S L G E V
UniRef90_S3CWV6      E L Q Y T S Y E P R A L Q S M L A I C N A V Q E K H S L T A I A M I H R L G V V
UniRef90_H2BW33      A I D Y S A Y E E M A E N V F H E I R E V A F S K F D I T C A H I Y H S L G R V
UniRef90_UPI0003B2EC4A A L E Y Q A H P D A   E Q F L T E I C A R L A A E S G L R   V A A T H R V G R L
UniRef90_F4D0R3      G L E Y S A H P T A A R V E V A A D V A G R A T G V R A I A V S H R V G T L
UniRef90_Q4JTT7      G I Q Y S A H P F A   E D A L A D I A E G V A K R D Q V H Q V V V A H R V G D L
UniRef90_M0P8Z0      H L A F E K Y E G V A A E R M E A I S A E L A E R D G V F D V R M H H R T G V I
UniRef90_Q9HST6      H L E F F E R Y D T V A E Q R M A T I R E Q L C E R D G V Y D V R M H H R T G V V
UniRef90_UPI00037DB25A S L D Y E A H P D A T   A V L Q K V C Q A V S A E T G F R   V A A T H R Y G H L
UniRef90_Q00TR4      E L A Y E C Y E P M A L E V L D A V A R E T C A R Y G V V A M D I A H R V G T V
UniRef90_X4QZP1      G I E Y S C H P S A A Q V V   D E V A A E V A Q R H P E C R V A V V H R V G E L
UniRef90_UPI0003FD8084 G I E Y S A H E E M A E N A F H E I R E A A F E R F E L T C M H I Y H S L G L V
UniRef90_E2SEB6      A L E Y S S H P S A A D R   L T E V A T A V S T V D D V I A V A A V H R V G P L
UniRef90_D4GSW7      S L E F E K Y D G V A E S K M D A I S E E L E A R D G V L R V L M H H R V G V V
UniRef90_H8L0Y7      A L C Y T A H A P V C E K L I R E I E A E T R A R F G V P Y L Q V R H R V G R L
UniRef90_U1PNA3      A L E Y T A H P S A P   N I L R D I A E G L T R R Q G V H R I E A W H R T G R L
UniRef90_UPI000374EB30 S L D Y T C H P G A   D R A V Q D V A R R V A E E F P G V R I W A A H R V G H L
UniRef90_S3Z3L0      R L A Y E A H P S A S E   V M A N V V R T I A E R Y P D V L V A A S H R H G A L
UniRef90_Q05V01      A L E L V H Y P G M C E Q R I R D D A E R L R Q L H G A D R V L V L H R V G K L
UniRef90_I0GI88      S I E Y T A Y E E M A V Q E L K K I E E E A K K R E G I L N V I I V H R L G D I
UniRef90_T0MTE9      H L F Y D A D E K L A T V E L N K I L E E A K E K Y G F I D A V A I H R I G I V
UniRef90_UPI0004415E4C F L R Y Q A Y S A L A L K S L Q R I L A Q V R A A A A G L H C A V H R L G V V
UniRef90_H0K620      R L E Y S A H P T A A   A I L R E I G E E L L A E H P L V G V A R H R V G P L
UniRef90_I4F5B2      E L E Y V G H P T A P E   L I A E I A A E F A A R P E V T S V A V S H R V G L L
UniRef90_W7HZW9      T L E Y T T Y A P L A L R S L S S I V A N L K S E P V L H A I T I V H R L G V V
UniRef90_F6EM73      R L E Y S A H P T A G V V E V Q A V A D V A A N A R G V R A I A V S H R V G P L
UniRef90_C7NNK0      Y L E F E R Y D E V A T D Q M A T I Q E E L R A R D G V F D V R L H H R T G V V
UniRef90_L8DK20      T L E Y R A H P D A   E R F L S R C C A E V S A D T G L A   V A A V H R V G D L
UniRef90_UPI0003B5CE5F E L E Y S S Y P T A A   A I I R A V A E E I A S D P A V I A V A V S H R I G Q L
UniRef90_C5GCQ5      R L T Y I S Y T P L A L R T L E K I A R N A V A K Y K L Q G I S I S H R L G E V
UniRef90_UPI0004712A2C G I D Y S A Y E P M A E E V F H R I R E A A F Q K Y D L T C M H L Y H S L G R V
UniRef90_Z5X2U9      R L E Y S A H P L A E Q T L F E A V A E V A G K A T G V R A I A A S H R V G V L
UniRef90_E5XUP1      G L E Y R S H P T A G E Q L A A V V A E V S A G R A G V R A V A A S H R V G T L
UniRef90_D5VBH0      K L T Y Y G Y E A L A L N Q G K L L I S E A C Q R F K I E N A I A M H R I G D L
UniRef90_G0S1M5      F A D Y S A Y P R A L R T M L D I A T E I R A K N L K S I A M I H R L G V L
UniRef90_UPI000255C936 R L S Y T A H P D A   E R M L A E T A R A V A E D H P G V R L W A A H R T G P L
UniRef90_A0A039JRF7  K L Y Y E A Y P A M V H R T L M D I I E E C E R Q A D G V R V A V A H R T G E L
UniRef90_Q3AGA5      A L E L E H F P G L C E R Q I T A M A Q R L Q Q E H R T G P F L V L H R V G K L
UniRef90_UPI0003609D49 R L S Y S A H P T A H Q   V M A D V V A R L A E S V V R I W A A H R I G M L
UniRef90_G4RP93      E L D Y E A Y E P Y A S E K I A E I E K W A R S I D G V L D V R I Y H R V G S L
UniRef90_C7P0R6      Y L E F E K Y E G V A E E K L A T I R D D L C A R D G V F E V A L H H R T G V V
UniRef90_H0QIA4      R L S Y T A H P T A R K V L D D V V A Q L V A E Q A P P V R I W V A H R I G P L
UniRef90_D0KV26      K L K Y A A Y E E Y T R K R F L E I K D E I K K K Y D L I E I I I I H V I D S M
UniRef90_U1NG57      S L R F E T Y D S V A D D R M R E I I E S E L I E R D G V F A V E L F H K T G V I
```

```
                          90                100               110                120
UniRef90_S3BRL5            P I G E D S V L I A V S A P H R K A A W T A G E E C L E R V K E R V E I W K Q E
UniRef90_M7NZ93            E A G E I C L F V F T S S K H R K D A Q D A C S A I V E R I K K E V P V W G K E
UniRef90_A3M680            D V G E T A I I A I A Y A A H R A E A F A T C E E A V E R V K H E V P V F K K E
UniRef90_V9XDL3            T I G D L A L V A A V A A P H R A E A F A T C A E L V E R I W K R Q
UniRef90_M0N563            E A G D I V F V V L A G H R R E A F S T V E D G I D R L K D E V P I F K K E
UniRef90_S5L2R8            Q I T D V A V V I G V S T P H R A A C Y E G S R Y I I E R L K E R V P I W K E E
UniRef90_F6BCP8            K V G E K I V L I A V G A K H R K D A F L A C E Y L I D E L K K V V P I W K K E
UniRef90_Q7URF3            P I G Q A S V I V G C S S S H R V A S L D A V A T I M D R L K K E V P I W K Q E
UniRef90_UPI000468236C     N A G E I C L F V F V S A P R R K V V F E A L E Y L V E E I K E K V P V F G K E
UniRef90_R7Z0P1            P I G E E S L L I L A S S S H R H P A F A G A S E A L E L T K E K A E V W K L E
UniRef90_U1S271            E V G D D A M V V A V G A E H R A Q A F T A V E T L V E E V K A Q L P I W K K Q
UniRef90_F0R9R9            N V G E I C L F V F V S A P H R Q V V F D A L N Y V E E I K A E V P V F G K E
UniRef90_UPI0001FFDB75     D I G E V A L A C A V A A E H R G Q A F G A C A E L V D E V K R L L P V W K H Q
UniRef90_K0YTE5            E V G D V A F A A A A S A A H R R E A F E L L E K A V E Q V K A E L P V W K K Q
UniRef90_E2N4Z1            K S G E L C F F V F T S A P H R K A A I Q A C D E M V D R I K K E V P I F G K E
UniRef90_E2A7T5            P I S K A S V V I A V S S P H R T D S L K A V E Y A I N E L K A S V P I W K K E
UniRef90_UPI00047B8883     E I G D I A V V V A V A A A H R Q E A F E A C R R L I D D L K R E V P I W K H Q
UniRef90_W7BLZ1            E L T D E A V F I G V A S P H R S E A F R W C Q F L I D E L K K T V P I W K K E
UniRef90_U7LWX3            Q V G D L A F T V V A A S A H R G D A F R A A E S C A D R V K A E V P I W K E Q
UniRef90_C6W6E2            P T G E I S L F V F V S S P H R R A A F E A S E Y I V E E I K S K V P I F G K E
UniRef90_A0A031JMT2        L P A E P I V L V A A A A R H R R D A F A A A D F A M D H L K S E S W F W K R E
UniRef90_A7IHU7            V P G D P I V F V A T A S A H R A A A F A A A E F L M D W L K T S A P F W K K E
UniRef90_F2BDT7            E V G E M A V W V G V A A G H R D A G F A A C R F I I D T V K A Q V P I W K E E
UniRef90_D7GGL7            E V G D T A M V V V A A P H R G P A F A A V T D L V D Q V K A E L P V W K N Q
UniRef90_K2Q4H6            G V G E I C F F V F V S S P H R K G V Y Q A T E H I V N R I K A E V P I F G K E
UniRef90_O28104            L P G E D I V Y I T V M G E H R K D I W E P L K E A V E L M K K E L P I W K K E
UniRef90_UPI00035D4377     D I G D T A V V V A V S A A H R G P A L E V C R E L I D T L K K T V P I W K H Q
UniRef90_U1ZXX7            E V G D P A L C A V A A A H R G Q A F A V C A E L V D R I K A Q V P I W K E Q
UniRef90_A4XDF8            E I G E A A L V A V S T A H R A A A F A V C A R L V D E V K A R L P I W K R Q
UniRef90_E9CKC6            S A H R N M A F A A N A F I M D D L K T R A P F W K C E
UniRef90_E1VSU0            K I G D A A L V A A S A A A H R K E A F E A I E N L V E R I K A E V P I W K K Q
UniRef90_I3Z5P3            K T G E I C L F V F T S S K H R K A A I D A C E E L V E R I K K E L P I W G K E
UniRef90_Q4FU32            E I G D I A V W I G V V S A H R Y P A F D A C R W L L D T I K A D I P V W K Q E
UniRef90_D8J8R5            E A G A D I V F V V V L A G H R K E A F R A V E D G I D R L K D E V P I F K K E
UniRef90_B3EPC1            P V G E A A I V V L V R S K H R D A A F K A M S L F M D E L K K T V P V W K
UniRef90_K1LJ65            K T G E I C L F V F T S S R H R K A A I D A C E E L V E R I K K E L P I W G K E
UniRef90_UPI000440804A     P V G E P S I V I A V S S P H R K E A F R A C E F I L E E V K L K A Q I W K R E
UniRef90_A0A010Q4G3        G I G D H A L V A A V A S A H R A E A F Q A C A E L V E A T K Q Q V P I W K E Q
UniRef90_UPI000364B3DF     K V N E S S L W I E V I S P H R T E A F E A C Q W L I D E M K K R V P I W K Q P
UniRef90_UPI00037D5539     N V G D M A V W I G V T A H H R Y P A F D A C R W L L D A I K A D I P V W K Q E
UniRef90_UPI0003699727     E I G E P A V V L A A A H R A E A F E A A R A C I L L K E E V P I W K K E
UniRef90_UPI00036E5AE1     P V G E I S I L I A V G S G H R D E A F K I C R Y I L E E V K H Q S P I W K K E
UniRef90_C2TN31            Q I S D I A V V V A V S T P H R K A A Y E A N E Y I M E R I K Q I V P I W K K E
UniRef90_M0H7S3            E D G E D I V F V V V L A G H R E E A F R T V E D G I N R L K D E V P I F K K E
UniRef90_T0ZMZ0            P V G E P S V M V G A A S S H R A A F D A T S M L I D R L K S D V P L W K S E
UniRef90_H2CEI6            P V G E S A V V V I T A S A H R E A A Y A A N Q E L I H R I K T E V P I W K L E
UniRef90_J3JEA5            E A G E D I V F V V V L A G H R T E S F R A V E D G I N R L K D E V P I F K K E
UniRef90_W9GEQ7            E I G D L A V V G V S A E H R A E A F E V C R A L I D E L K A T V P I W K H Q
UniRef90_G0L7E3            K S G E I C L F V F V S S P R R K E V F K A L E Y V V E A I K A D V P V F G K E
UniRef90_S3CWV6            P V G E E S I L I A V S S P H R Q A A W R A G E E A L E E C K E K V E W K K F
UniRef90_H2BW33            N T G E L C L F V F T S S A H R K I A I E A C N Y F V E E I K S K V P I F G K E
UniRef90_UPI0003B2EC4A     A I G E V A L A A A V A A P H R A E A F A A C A E L V D R I K A E V P I W K R Q
UniRef90_F4D0R3            G I G D V A L A C A V A A D H R R E A F T T C A E L V E E V K R L L P V W K H Q
UniRef90_Q4JTT7            E V G D D A F I A I V S A E H R A E A F S A C L D I V E E I K T R V P I W K L Q
UniRef90_M0P8Z0            E A G E D I V F V V V L A G H R R E A F R A V E D G I D R L K D E V P I F K K E
UniRef90_Q9HST6            P A G D D V V H V V V L A G H R G D A F R A V S D G I D R L K D E V P L F K K E
UniRef90_UPI00037DB25A     E V G D V A L V A A A S A A H R K E A F E A C S L L V E R I K A E V P I W K K Q
UniRef90_Q00TR4            G V T E T S V V V S C A A S H R K D A C D A V A E A M E L L K A R A P I W K K E
UniRef90_X4QZP1            A I G E L A M V A V V A S P H R A Q S F A A L A D V V D T V K E K L P V W K R Q
UniRef90_UPI0003FD8084     P T G E I S L F V F V S S P H R R A A F E A S E Y I V E E I K A N V P I F G K E
UniRef90_E2SEB6            A V G D L A V V C A V A A G H R P A A F A A C R R F I D E L K D Q V P V W K H E
UniRef90_D4GSW7            E D G A D I V F V V V L A G H R K E A F R T V E D G I D R L K D E V P I F K K E
UniRef90_H8L0Y7            A I G D V A I V C A R A A H R A E A F A A C R H A V D E V K H R A P I W K E E
UniRef90_U1PNA3            Q V G E V A M I V A V A A E H R S Q A F A A A Q A L V D E V K A R L P V W K K Q
UniRef90_UPI000374EB30     R V G D S A L E A A V A A A H R K L A F A A C D A L V D R I K T E V P I W K E Q
UniRef90_S3Z3L0            E V G D S A L V A A V A A P H R A R A F E A C A D L V D E V K A R V P I W K D Q
UniRef90_Q05V01            P P G E P I V L V A V T A D R R G A A Q R C C A A V L E A L H E A P F W K R E
UniRef90_I0GI88            P L K E T S L F V G V S S R H R E E G F E T A K W I I E E V K K V V P I W K E
UniRef90_T0MTE9            K P G E T S L F V A V N S T H R K E G F D A C I F I V D A I K E R L P I W K K D
UniRef90_UPI0004415E4C     P V G E A S I V V A V G A P H R K A A F V A C E R I L E D V K A H T P I W K Q E
UniRef90_H0K620            D I G D V A L V A A V S S A H R R E S F L A G E D L V E R V K K R I P I W K L Q
UniRef90_I4F5B2            A I G D V A L A C A V S A A H R G Q A F A A C A E L V D E V K A R L P I W K R Q
UniRef90_W7HZW9            P I G E D S I V I A L S T S H R A E G W R I A E E S L E L V K E K V E I W K R E
UniRef90_F6EM73            E L G D A A L V C A V A A D H R A E A F S T C A E L V E Q I K A Q L P V W K R Q
UniRef90_C7NNK0            E A G E D V V Y V V V L A G H R K E A F R T V E D G I D R L K A E V P L F K K E
UniRef90_L8DK20            R V G D L A L V A A V G S A H R A E A F E A C A R L V E R I K A E V P I W K R Q
UniRef90_UPI0003B5CE5F     K I G E V A L V A S V T A A H R K E A F E S C A R L V D E V K R R L P I W K R Q
UniRef90_C5GCQ5            G V A E E S I A I A V S A G H R A P A W R A G E E V L E Q C K A A V E I W K R E
UniRef90_UPI0004712A2C     P V G M I S L F V F V S S A H R R A A I E A V D F I V E Q I K K D V P V F G K E
UniRef90_Z5X2U9            H I G D A A L V A A V A A D H R Q A A F E A C A L L V D T V K E R L P I W K H Q
UniRef90_E5XUP1            R I G E A A L V A V A A A D H R A E A F G L C R D L V D E I K R R I P I W K R Q
UniRef90_D5VBH0            N I G D M A V W I G V S A H H R Y P A F E A C Q W L L D A I K A D I P V W K Q E
UniRef90_G0S1M5            P V G E E S I M I A V S A P H R P A W R A G E E A L E A C K A N V E I W K K
UniRef90_UPI000255C936     V I G D H A L V A A A A A H R Q E A F A A C A A L V E R I K A E V P I W K E Q
UniRef90_A0A039JRF7        R I G D A A V V I G A S A P H R A A A F D A A R M C I E R L K Q D V P I W K K E
UniRef90_Q3AGA5            T P G E P I V L V A V Q A D R R G A A Q R C S A A L E Q L K H Q A P F W K R E
UniRef90_UPI0003609D49     E I G D P A L V C A V S A A H R G Q A F A A C A E L V D E V K R L L P V W K H Q
UniRef90_G4RP93            K P G D H T V Y V F V A G V N R E I S F N V A R Q A L E R V K H E V P I F K L E
UniRef90_C7P0R6            E A G E D I V F V V V L A G H R R E A F R A V E D G I D R L K D E V P L F K K E
UniRef90_H0QIA4            E I G D P A L V C A V S A A H R G Q A F A V C S E L V D R I K A Q V P I W K E Q
UniRef90_D0KV26            K P G E N V L L I M A I G K G H R K D A I D A K E T L E L V K H S T G I W K L E
UniRef90_U1NG57            N N G E D I V F V V V L A G H R Q E A F E T V S D G I N R L K A E V P I F K H E
```

```
UniRef90_S3BRL5            V F E G E S V W R A N K D A
UniRef90_M7NZ93            V F E D N S Y W K V N
UniRef90_A3M680            F F T D G S H Y V E G C
UniRef90_V9XDL3            H F T E G S W V G
UniRef90_M0N563            R T S D E Q F W V H D R A
UniRef90_S5L2R8            K D V D K T R W
UniRef90_F6BCP8            Y A K D G S Y W V E
UniRef90_Q7URF3            R F E S G D R W I H P
UniRef90_UPI000468236C     I F E D E T V W K E N K
UniRef90_R7Z0P1            E F A G E G V W R A N R D
UniRef90_U1S271            R L A D G T H
UniRef90_F0R9R9            I F E D S S Q W K V N K
UniRef90_UPI0001FFDB75     R F T D G D E W V N S
UniRef90_K0YTE5            Q F T D G S H
UniRef90_E2N4Z1            L F E E G G H W K E N K
UniRef90_E2A7T5            V Y E T G E Q W K E N K E C
UniRef90_UPI00047B8883     R F D D G E E W V G A
UniRef90_W7BLZ1            I N T H T V N W
UniRef90_U7LWX3            S H G D G S I W V G
UniRef90_C6W6E2            V G E A G H V W K E N
UniRef90_A0A031JMT2        K T G G Q W R W I E P R E Q D F E D I A R W
UniRef90_A7IHU7            E R A D G G G W V E
UniRef90_F2BDT7            F Y T G K N E W L V N P E S
UniRef90_D7GGL7            Q L A D G T H
UniRef90_K2Q4H6            I F E D Q T H W K V N
UniRef90_O28104            V Y E D G E V W V H D A E R
UniRef90_UPI00035D4377     Q F D D G S E W V G
UniRef90_U1ZXX7            F F S D G T E W V G A G E
UniRef90_A4XDF8            V F A D G E E W V N C
UniRef90_E9CKC6            T T S Q G D R W V D A R A S D H R A A G S W
UniRef90_E1VSU0            H F T S G S E W V G
UniRef90_I3Z5P3            I L D N E S E W K V N
UniRef90_Q4FU32            Y Y E D S S K W L S N N
UniRef90_D8J8R5            V T A D E E F W V H T R
UniRef90_B3EPC1
UniRef90_K1LJ65            V D N E K E V W K E N Q
UniRef90_UPI000440804A     F Y E E D A E W K A N N A
UniRef90_A0A010Q4G3        F F A D G S E W V G
UniRef90_UPI000364B3DF     I F T E
UniRef90_UPI00037D5539     F Y A D S D E W L S N N
UniRef90_UPI0003699727     F S P D G A E W I G
UniRef90_UPI00036E5AE1     H Y A D G E E W
UniRef90_C2TN31            F W E D G D S W I G D Q
UniRef90_M0H7S3            T T V E D Q F W R H E R
UniRef90_T0ZMZ0
UniRef90_H2CEI6            R F A D G T E W S E G C
UniRef90_J3JEA5            T T V D E E F W V H D R Q
UniRef90_W9GEQ7            R F S D G D E W V G
UniRef90_G0L7E3            I F E D E S Q W K V N
UniRef90_S3CWV6            G G E E G G V W R A N R D
UniRef90_H2BW33            I F E D E T H W K M N K
UniRef90_UPI0003B2EC4A     R F A G G S E W V G
UniRef90_F4D0R3            V F T D G S E W V N S
UniRef90_Q4JTT7            Q F S N G S T
UniRef90_M0P8Z0            T T E A E E F W V H R R D S
UniRef90_Q9HST6            V T V D D A F W R H
UniRef90_UPI00037DB25A     Q F T D G E E W V G
UniRef90_Q00TR4            I L D
UniRef90_X4QZP1            I F T D G T H W V G S
UniRef90_UPI0003FD8084     L V G E A G V W K E N N
UniRef90_E2SEB6            T F L D G D T W V G
UniRef90_D4GSW7            T T T D E E F W V H D R
UniRef90_H8L0Y7            F Y G D G S R F V E G R E D D E
UniRef90_U1PNA3            I H A D G T H
UniRef90_UPI000374EB30     R F T D G S E W V G
UniRef90_S3Z3L0            Y F S D G T H W V A A
UniRef90_Q05V01            W R G G Q G T W L E A N
UniRef90_I0GI88            I K Y E G N R
UniRef90_T0MTE9            H F V D G T E
UniRef90_UPI0004415E4C     V Y A E G S E W K A N
UniRef90_H0K620            V F A D G E E W V N S
UniRef90_I4F5B2            V F T D G E E W V A C
UniRef90_W7HZW9            W F V D G G I W R A N R D
UniRef90_F6EM73            E F P D G D E W V G C
UniRef90_C7NNK0            V T V S E E F W A H E R
UniRef90_L8DK20            G F E G G T E W V G
UniRef90_UPI0003B5CE5F     L F T D G D E W V N C
UniRef90_C5GCQ5            E F A E G E W R M N Q
UniRef90_UPI0004712A2C     L V G E A D Q W K E N K
UniRef90_Z5X2U9            F F A D G D E W V N S
UniRef90_E5XUP1            H F A D G T E W V A G
UniRef90_D5VBH0            F Y T D S N Q W L S N N
UniRef90_G0S1M5
UniRef90_UPI000255C936     F F A D G T R W V G
UniRef90_A0A039JRF7        F A L D G V E W V A N R
UniRef90_Q3AGA5            W C A G Q G T W L A A N
UniRef90_UPI0003609D49     F F A D G S E W V G A G E
UniRef90_G4RP93            R R S D G E Y W V
UniRef90_C7P0R6            V T V E D A V W A H E R
UniRef90_H0QIA4            F F S D G T E W V G A G E
UniRef90_D0KV26            I R D G E Y W V A
UniRef90_U1NG57            T T V E E D F W V H K R D
```

```
                              1         10        20        30        40
UniRef90_D8LKV7                                                      K V V
UniRef90_G2MME2               S L I A E A K E S P D A H R S G A I A T F T G R V R T T
UniRef90_V4Y3U7               S L V A G I T S A P G S D R A G A V A T F T G R V R T T
UniRef90_R9SP24           L T T D P L E P L D A A K N D V C T E T M G A L V T F E G I V R V T
UniRef90_U5BR26           D G P I S Q A E S I A S F S Q Q T Q I G A H S I F L G Q V R V L
UniRef90_X8AGT4     R A A L T E E P I F L A E H E E L V S H Q A A G A V V G F V G M I R V L
UniRef90_F0M808         L S A E P I S V D R A I A A V E S D T A G A V V S F S G V V R V E
UniRef90_W7BIB4       V A L T E E K I E I E P L F A K L I D P K Y G A I N T F T G T I R E W
UniRef90_D1Z1C1         Q P E Y V T L D S L I A K I K R S P E A G A I G T F T G V V R T E
UniRef90_F9NVB0       Q I H T E I T S S P L N L T A I R Q W V G D P A A G A V V T F E G V V R V T
UniRef90_A3HUS0                 I S E S I A K H Q S K H S I G A H N I F L G Q V R V E
UniRef90_E3B8I6         A V T D S P L D V D A H V R A V D D A R Q G A C V F F V G T V R V V
UniRef90_U1PDS8     E P H V T L Q T       L I D R V E A S P L A E R A G A I A T F T G R V R V E
UniRef90_A0A022LNM2        V V D R D I S V D E V A A V V A T E Q D G A V V T F A G I V R V T
UniRef90_UPI000262AD2A  E P R F R L D D H P L D I A T L R A P L A H A Q A G A Y A S F E G W V R V D
UniRef90_U5HG05            L T Y E P L H Q P T I E D W V K S P K A G A V V T F T G Y T R V T
UniRef90_U1QE84             V S R Q A V D V G R L A E L V G T P A A G A I V T F R G Q V R V V
UniRef90_C4GLV6         F A L T D Q A I N V Q V L R E Q L T Q N E R C G A F N S F E G W V R V D
UniRef90_UPI00045E731A A H P L A Q V S D G P L D V T A H L V A V G D P G A G A V A C F V G Q V R V S
UniRef90_C8Q194         F A L T D R A I D D R R L K H A L M S D T C G A L A T F E G W V R V S
UniRef90_C3PJ66           I S A E P I T A P D I A T A E T G A V V L F D G I V R V K
UniRef90_UPI0003FB0A03   K V F V Q G A P E F I A N S I A K H Q S K T T I G A H D I F L G Q V R V A
UniRef90_E8N6U8     S A V R I R L S E E P L D L D A H L R A V E D S S S G A V T T F V G R V R V I
UniRef90_M1Q1B9         K V I L G E E D F N L E E L K K Q A I K E E S T A V T Y S D I V Q V R
UniRef90_T0MLD3               P D Q I A K S I A A H S S K T A I G A H E L F L G Q I R V A
UniRef90_W0F4C6             I A E S I Q K H S T K I T I G A H S I F L G Q V R V T
UniRef90_F5XL96          E I S E R P L S V D R L L A L V S D R A T G G I A V F I G V V R V A
UniRef90_K8EX82        V E I V G T P L D L N E C V Q I V S D D R A A I A S S F V G V T R V S
UniRef90_W6JSE5         A I S A E P L S V D A A L A A I A D D G C G G Q V V F I G R V R V T
UniRef90_C8X8U1          R V T S E V L D P A E H Y A A V Q D P A A G A T V S F A G V V R V T
UniRef90_UPI0003B4475D E P Y A V V S E Q P L D E A A V R R A V E S D A S G A V V M F C G V V R V A
UniRef90_UPI0003466352    A V R D T P L S V D E V L A A V S D P H A G G T A V F I G T V R V A
UniRef90_D1BSZ5        H A D V T D P L D L D A L V T L V R D D T C G A V A T F T G Y V R V T
UniRef90_W4KM18           L T Y E R L N T E A I I G S V G D D A S G A T A V F I G T T R V T
UniRef90_C0BFS7    K N I F R V G A D P I S I S K S I A N H Q S K T T I G A H S I F L G Q V R V T
UniRef90_G7UQW1        R F S L T A D P I E T A S L R G Q L L D A R A G A F A S F E G W V R V R
UniRef90_A0A011PVY9 M R V R V Q E A D F D V G A E L A A L R Q K P Q I G A L A S F V G L V R V S
UniRef90_UPI0003C7E709    R I S D T P I D L T D H V T A V T D P A A G A V A T F L G Q V R V T
UniRef90_V5ERI2          L T Y D E L D E K A A L R S V A D D G A G A T V L F S G T T R D S
UniRef90_L7LJI7          R I S D V D L D V A A H V N A V A A P D A G A T A L F V G T V R V V
UniRef90_J5JMI2    C H V A L T H S P L D I P S T M A L V R S P S A G A I V L F A G T T V K
UniRef90_E6S7V2          E I R E T P L S V D E V L S S V A D P R A G G T C V F V G T V R V T
UniRef90_X1LN02
UniRef90_F8I4L7           R I T T E P I V I Q E A L D A I Q D P A C G G Q A L F L G T V R N E
UniRef90_UPI000255F23B   V T D R P L D A A A L E A S V V N A R C G A A L T F T G I V R V T
UniRef90_E5T2S7                E I C M L E M S N F T G S V R K S S D Q V D V A
UniRef90_K6VNI9              A E L V A E V A D P R A G C V A T F V G W V R V E
UniRef90_T2KIX7            I S D S I A K H Q S K H T I G G H N I F L G Q V R A D
UniRef90_UPI0004411DD0 L T Y E K L D T Q A I I Q W V A D D G A G A T A V F I G T T R V T
UniRef90_L9VXU7            E D C D P H E T L E S L V D R E L S G A I A T F T G R V R T Q
UniRef90_D5G1X8    R A E V T E E P I S L I E H E Q L V S R P T A G A I V G F C G V I R V T
UniRef90_S4XIL2                    A T G A L V T F E G V V R V A
UniRef90_A0A024K5H5 R A A M T D Q P I S L V E H E E L V G H R S A G A L V G F V G G R R V V
UniRef90_B1L5Q7                     V A F L G I V R V D
UniRef90_UPI00046409CB I S I S L I D Q P I E R P S I P F P L D G S S G A V V E F F G I V R I A
UniRef90_L0JHQ7            S L V A R V K A S P A A D R A G A I A T F T G R V R T Q
UniRef90_A0A022LDL4      V Q I T G D A I D P R E V E K A V W S T A D G A M V T F S G V V R V V
UniRef90_A0A011TYV2 A A V R I R I T E E P L D A A A H L A A V D D P A S G A V T S F I G V V R V L
UniRef90_Q5V2W7            I T L E T L V A D V K R D P D S G A I A T F T G R V R A Q
UniRef90_E8R9V1            I L E K L R S L A K G K G A G A F S A F I G L V K V D
UniRef90_A5FAY7         E G P I S P A E S I A K H Q S K H T I G A H N I F L G Q V R V V
UniRef90_A4YEG8        L R R G K L D I L E E I R R F R A P P E A G S M V I Y V G F V K V K
UniRef90_S7W4Q3    V R V A I T E T E I D E S A I R R A V E S P A S G A V V F S G V V R V R
UniRef90_A0A021VTN2     R I T D R P L V L D E H V E A V A H P A S G A V A T F L G R V R V L
UniRef90_H5UCB2     V H T G V V D E A I T L A E H E A M V A D A A D V G A V R D H D G G R T V T
UniRef90_G8RYD2     R A G L T E H T I A L S E H E S L V A H E A A G A V V G F A G V V R V T
UniRef90_L0I956            S L V E T V T D A P E A D R A G A I A T F T G R V R T E
UniRef90_W7KWC3         E L V K G K F N F L E E I R K F R E D P E A G S L V V Y L G F V K V Y
UniRef90_D5UTV1         E V T G D P I D L P S H E A A V A R A E A I G A V R D H D G G R G V T
UniRef90_H6MR87     V H T A V S V D P I A L A H E A A V A R A E A G S I H T F T G I V R V V
UniRef90_X1GFT5            I D L E S V I Q S I K R G P E A G S I H T F T G I V R V V
UniRef90_A1RS95                                                              V N
UniRef90_UPI0003802D8F  I S A A P L D V A A H L D A V T T S E T G A T S V F V G T V R V T
UniRef90_V6KCP1                                          G G A D V D
UniRef90_UPI0003B39D3B   R I S A E P L D L A E H L D A V Q D A R T G A E I S F V G V V R V V
UniRef90_A0A021W303     R F A L S P Q P F E I A P L R E Q L L S A H A G A Y A S F E G W V R D H
UniRef90_UPI00034D2F5E S E Q L A R V T D E A I D E A A V R A A V D G P D A G A V V M F H G I I R V T
UniRef90_M7MM28     V H A G I S D T P I D A E T A W N A V E S A H T G A V V S F G G I V R V L
UniRef90_D5P1B0           T E P I D I V E K A R A E V I T D A M G A V V T F D G V V R V S
UniRef90_D0WP36     V H T G L T A Q R L D A A A I C K D A H D P R C G A V A M F Q G T V R V A
UniRef90_M5CV70       V E R S A A A I D P G E G I A F V S D P G F G G I D V F I G K V R V Q
UniRef90_UPI00046346D5  V T A D A I T L A E H E A W V S H E S A G A V V G F C G V V R V R
UniRef90_U7KX13                   M G A V V T F E G V V R V T
UniRef90_A7RSI1                                                              V V
UniRef90_D3D9E0    A E M R       E N P L S V D E C L A A V R L P E V G G I G L F I G T V R D H
UniRef90_X1H8V8                  G K A G A V G C F V G V V R E T
UniRef90_UPI00037C0BC5 V H A A L T A T P I D L P A A L S A V G V V G F V G V V R D H D G D R K V D
UniRef90_D2NRK4        I T E A P L E P L A A A K A E V M T D A M G A V V I F D G I V R V R
UniRef90_H2C334           L D V M K E I Q D F H S K P E A G S M V V Y I G F V K V H
UniRef90_Q9YEH3            E P V D I A S L V A R A A A S P A N G A V A T F V G I V R V E
UniRef90_F4H5B4        R I E D R P L D L L F H V E H V S D A R A G A V A T F T G L V R V T
UniRef90_B4S5S9    I S V H I T S E K I D G W R G E F P G D P S E G S E V I F T G L V R D K
```

```
                                         50              60              70              80
UniRef90_D8LKV7          R L E Y E G Y V P M A E L E L K K I C A Q V R D R W D I L K I A L V H R L G V T
UniRef90_G2MME2          H L K F E K Y E G V A Q D R M D T I A V E L E E R E G I F D V L F H H R T G V V
UniRef90_V4Y3U7          R L E F E K Y E G V A D E R M A T I E R E L E D R E G V R T H H H R T G V L
UniRef90_R9SP24          S L T Y T A H P T A P Q V L S A V T D S I V E K H P R T R L W T A H R T G A L
UniRef90_U5BR26          A I E Y S T Y T E M A Q E V A A K I S E D C R G K F E L Q G L E I V H S L G A V
UniRef90_X8AGT4          R L E Y S A H P S A Q Q V L S E V L R E V G E Q C R G V R A I A A S H R I G V L
UniRef90_F0M808          R L S Y S A H P T A H Q V M T D V V A Q L V A E H N P V R I W A A H R I G M L
UniRef90_W7BIB4          T G E Y T S Y K E M A L K E M D R L A T A V E K E Y D A S V V V V H R L G E L
UniRef90_D1Z1C1          A L E F E S F D A V A Q E R I K A I E D D L K K R E G I L D V I I Y H K T G R I
UniRef90_F9NVB0          G I T Y S A H P S A T D T L A R V V A H F A E C E G I R A I A V E H R V G Q L
UniRef90_A3HUS0          S I D F T S Y E E M A N E K L H E I R E A A F E K F D L T C L H I Y H S L G N V
UniRef90_E3B8I6          A L D Y T A H P S A A A T L R E V A E A V V T Q Y G E T R A V S H R I G R V
UniRef90_U1PDS8          Q L A F E K Y E N I A A D R M A A I S D E L T D R E G V F E V L M H H R V G V M
UniRef90_A0A022LNM2      A L D Y E R H P S A D E V I T A V A R T I A E D N P D V R I A V L H R V G A L
UniRef90_UPI000262AD2A   G L H Y E A Y A A L A E A E G Q R I V D E A V A R F A I L D L R C V H R V G E L
UniRef90_U5HG05          H L E Y E S Y A S L A L K T L H S V L E A A R E S I D L T G I A A Y H L L G P C
UniRef90_U1QE84          A I D Y E A H P D A D A V V R R I A E D A A R G S G A S R I A V L H R T G H A
UniRef90_C4GLV6          Y L V Y T A Y A Q L A Q S Q G E A I I A Q A K Q R F A I E D A V C V H R V G K L
UniRef90_UPI00045E731A   A L E Y S A H P D A A A V L E R L A R E A G R D G V L G V A V S H R V G R L
UniRef90_C8Q194          K L T Y Y G Y E Q L A L N Q G K K L I E Q A K A Q F D I E N A I A I H R V G D L
UniRef90_C3PJ66          L L T Y T A H P S A Q Q E I E R V A G E V A A A F P A V R L W C A H R T G A L
UniRef90_UPI0003FB0A03   A I E Y T A Y E E M A N N I F H E I R E A T F A K F H L S C M H I Y H S L G T V
UniRef90_E8N6U8          A L E Y S A H P D A P A A L E R I A S A A A E G T D A L V A V S H R V G R L
UniRef90_M1Q1B9          T L E V R I Y E G M T E N E M K R V K D E I I K Q F D I S F L A I V Q R Y G L L
UniRef90_T0MLD3          A I E Y T A Y E Q M A L E K M D T I R E A M F A V K L I C M H V Y H S L G T V
UniRef90_W0F4C6          A I E Y T A Y E E L A L T T L H E I R E A L F K K Y E L T C M H V H H S L G Y V
UniRef90_F5XL96          S L D Y T Q H P T A T A A L H A S A E R V A A A Y D V R A V A V E H R I G H L
UniRef90_K8EX82          K L E Y E C Y T P M A L K K L N E L C A M A F R K W N G E N V K I V R R A S S C
UniRef90_W6JSE5          A L E Y E A H P G A L A A L Q R V C R A V A D T H D V R A V A V H R V G A L
UniRef90_C8X8U1          E L D Y H E H P T A A A I V A E V A A E I A A R P G V I A V A V S H R V G L L
UniRef90_UPI0003B4475D   A L D Y R A H P E A E R F L A D C V R R I A E E T G F A V A A A H R V G D L
UniRef90_UPI0003466352   R L A Y S A H P S V E E R L R A V M E K V L A S T P V V K L A A V H R V G D L
UniRef90_D1BSZ5          H L A Y E A H P D A A T A L A D V A A R V A R Q T G D V L R V A V H R V G D L
UniRef90_W4KM18          K L E Y Q A Y S K L A V R T M L D I I N Q A R S H H P L I H C V I Y H R L G T V
UniRef90_C0BFS7          A I E Y T A Q S E M A N K I C H E I K E A A F A Q Y K L S C M H I Y H S L G I V
UniRef90_G7UQW1          G L Q Y Q A Y A A L A Q A E G E K V I E E A L A K F D I L D A R C V H R T G A L
UniRef90_A0A011PVY9      E M T L E H Y P G M T E K A L T A I V D Q A R E R W T I I D A L V I H R V G R L
UniRef90_UPI0003C7E709   L L E Y E A H P D A T A T L H R I A G H V I G E R P V R V A V S H R V G S L
UniRef90_V5ERI2          F R E Y E A Y T S L A L K T L Q S L L E R A H T S A P V T R C Y I A H R L G E V
UniRef90_L7LJI7          E L E Y S A H P D S E R I L R E I A E R V D R P G V R I A V S H R V G R L
UniRef90_J5JMI2          E L Q Y T S Y R P R A L R T M L D I A T A L H A E H G L V G L A L V H R L G V V
UniRef90_E6S7V2          H L D Y S A H P Q A A D V A R A L A E R L A A E G R V V R I G L V H R V G R L
UniRef90_X1LN02          E K R L Q G I A D E I K Q K W Q L N N V A I Y H R I G K L
UniRef90_F8I4L7          G L I Y D A Y R P L A E K E M A R I G D E L R R R H D I R H I V M I H R I G H L
UniRef90_UPI000255F23B   S L D Y S S H P D A E R I L R E V L A R H A R G P G E V R I A A A H R T G H L
UniRef90_E5T2S7          Y L A Y E A Y E S M A C K I F V N I C S E I R K K W P I H R I C V H H R L G N V
UniRef90_K6VNI9          R L E Y S A H P S A S A R L A D L A A E V A S G P G L V A I S V Q H A T G D L
UniRef90_T2KIX7          E I E F T A Y E D M A L E Q I A E I R E K A F K T F D L T C M H I Y H S L G K I
UniRef90_UPI0004411DD0   R L D Y Q A Y S K L A I R T M A D I V R N V H N A H S L I R S A V H H R L G T V
UniRef90_L9VXU7          Y L E F E K Y E G I A E E R M A A L E T D L E S R D G V L E V E L Y H R T G V V
UniRef90_D5G1X8          R L E Y S A H P G A Q Q T L A D I V T E V A A E A E G V S A V A A S H R V G A L
UniRef90_S4XIL2          Q L S Y T H H P T A E A V L A Q I A A E T V A A H P E V R L W A E H R T G D L
UniRef90_A0A024K5H5      R L E Y S E H P S A A Q V M A D V V A E V T E A A T G V R A V A A S H R I G V L
UniRef90_B1L5Q7          K I F Y D C Y P E I A E R E L I R I R E E A I R R F G L R D A L I L H R V G E V
UniRef90_UPI00046409CB   A L D Y E A Y R A M A Q K E L E R I A E E V S D R G V C H D L V L I H R V G T V
UniRef90_L0JHQ7          Y L E F E K Y E G V A D E R L A A L E A D L E S R D G V F A V E L Y H R T G I V
UniRef90_A0A022LDL4      D I E Y S A H P T A Q D V L T R L C D E V A T E H P R R S V R I V H R V G V L
UniRef90_A0A011TYV2      A L E Y S S H P D A E A T L V L A R I A L T A I G D T R A T V A V S H R V G R V
UniRef90_Q5V2W7          E G E F E R Y D E V A A E K M A A L R R D L E A R D G V Y A V R L H H K T G V V
UniRef90_E8R9V1          E L V Y T A I N D V A L R K L E E I A R D I C V K Y S L D A I A I Y H R L G A L
UniRef90_A5FAY7          A I D Y S A Y T D M A N E A L Y A I R E K A F A K F D L T C M H I Y H S L G V V
UniRef90_A4YEG8          N L V Y E A Y E S Y T Q A R L S E I E N E I K S R Y D V L D I R I I H A I D N M
UniRef90_S7W4Q3          S L E Y Q A H P E A Q Q I F A E C C A G V A V E T G L A V A A A H R I G H L
UniRef90_A0A021VTN2      A L E Y S A H P D A G D V L A R I A A A W A A R D G V L G V A V S H R V G R L
UniRef90_H5UCB2          A L H Y S G H P T A A T V L A E V V E Q V S A V D G V R A V A V S H R I G D L
UniRef90_G8RYD2          R L E Y S A H P T A A E T L A E V A A E I A A D A R G V R A L A V S H R I G V L
UniRef90_L0I956          Y L A F E K Y D G L A D E Q L A A I E T D L A E R D G V F A V E C H H R T G V V
UniRef90_W7KWC3          E L D Y E A Y E D Y T V K R I R E I E E A I K E K Y D V V K V K I I H A I D K M
UniRef90_D5UTV1          R L E Y S A H P T A A R V L A E V V E R E A A V A E G V R A V A V S H R V G P L
UniRef90_H6MR87          S L S Y S A H P D A P R V L T E V V T E I I C A A A D G V R A V S H R V G D L
UniRef90_X1GFT5          R M K I D A Y D D M A N E S I K K I C S K L K Q E N G V I D I K V I H L K G E F
UniRef90_A1RS95          T L E Y E A Y E P Y A S F K I D E I E K W A R E Q E G V L D V R I Y H V V G S L
UniRef90_UPI0003802D8F   A L E Y S S H P D A A A Q L A E L A R A C D R D D V R I A V S H R T G A L
UniRef90_V6KCP1          T L G Y S C H P S A E A E L R R V A E K V V A D V D P V R A L A A V H R V G D L
UniRef90_UPI0003B39D3B   A L E Y T S H P D A E T A L M T L A E R A S A G T E A I V A V S H R I G R L
UniRef90_A0A021W303      H G R Y E S Y A A L A D S E G E R I L S E A I E R F A I V D A R C V H R V G D L
UniRef90_UPI00034D2F5E   A L D Y S Y H P D A E T F L A Q L V A E E H E R T G I R L A V H R V G A L
UniRef90_M7MM28          K L T Y S A H P N A P T R I T E L V T E V A A R H P G T R L W A A H R V G E L
UniRef90_D5P1B0          K L I Y S S H P L A Q Q E I E A V T E R I S K Q H P V R L W C A H R T G A L
UniRef90_D0WP36          A L E Y T A H P S A A R I L R S I A E G L T L R Q G V H R V E A W H R T G L L
UniRef90_M5CV70          G I T Y D M F E P L V L N E F Q R L V A E V E A E F P R I K L Y V A H A R G R L
UniRef90_UPI00046346D5   R L S Y S A H P S A G E V V V A I A E R I A T A T T G V R A L A V S H R V G D L
UniRef90_U7KX13          L L S Y S A H P S A P E K L Q D I T D A V S S H P V R L W A A H R T G D L
UniRef90_A7RSI1          R L E Y E A Y I P M A S S E M R K I C K L A R E K W N I M K I A I Y H R I G I V
UniRef90_D3D9E0          D L E Y S A H P T A A R E L A R V A A E V G A D L G V R A I A V L H R T G R L
UniRef90_X1H8V8          S K D Y L H Y E C A E E A I L E Q I A A D I E R L P G I M R V M I H H V I D D L
UniRef90_UPI00037C0BC5   S L S Y S A H P D A S A D Q V L Q R I A A A V A A Q K Y D G V R I W A H R T G A L
UniRef90_D2NRK4          G L S Y S A H P Q A R E Y I A E V A A E V A A E L D G V R L W A V H R V G P I
UniRef90_H2C334          E L R Y E A Y Q E Y T A A R L K E I E E E I L K R K Y D V V S I R I I H A V D E M
UniRef90_Q9YEH3          K L F Y E A A W G V A E R V I E S I L R E E A G A N G L S A A I V Y H Y T G E R
UniRef90_F4H5B4          A L D Y S A D A V L A R L A E V G A D L G V R L Y V S H R I G T I
UniRef90_B4S5S9          A L V Y E H Y E G M A Q K E L E K L A R G A V D R F A I A S L C C R H R I G T I
```

```
                                90            100           110          120
UniRef90_D8LKV7      E V G E A S V I I A V S S V H R K D S L E A V E F A I N T L K A T V P I W K L E
UniRef90_G2MME2      A D G E D I V F V V L A G H R R E A F R T V E D G I D R L K D E V P L F K K E
UniRef90_V4Y3U7      E A G E D I V H V V V L A G H R R E A F R A V E D G I D R L K D E V P L F K K E
UniRef90_R9SP24      K I G D A A F L V V A A S A H R A D A F A A C S D L A D A V K A Q V P I W K E Q
UniRef90_U5BR26      K A G E I C L F V I A A S R H R K N A I E G C A E I V E R I K Q D L P V W G K E
UniRef90_X8AGT4      Q I G E A A L V A A V A A D H R R A A F D T C A H L V D T I K A R L P V W K H Q
UniRef90_F0M808      E I G D P A L V C A V S A A H R R A A F A V C S E L V D R I K E Q V P I W K E Q
UniRef90_W7BIB4      E L S D I A V F I G V A T A H R A E S Y E A S R M I I E E L K K R V P I W K E E
UniRef90_D1Z1C1      E A G Q D I V F I V I L S G H R Q E L F P A L K D A I E R V K A E V P I W K K E
UniRef90_F9NVB0      I V G D V A L A L A V A G E H R R E A F T C A M E I I D A V K A E V P I W K Q Q
UniRef90_A3HUS0      K V G E L C I F V F V S S K R R K P V Y E A T E W L V N Q V K T E V P I F G K E
UniRef90_E3B8I6      A V G E S A I V A A V S S P H R A L A F T V C G E L V D R I K H D V P L W K Q Q
UniRef90_U1PDS8      G P G E D I V F V V L A G H R A E A F R T V E D G I N R L K D E V P L F K K E
UniRef90_A0A022LNM2  G I G D V A L A A A V S S S H R A Q A F A A C G A L V D L V K E R V P I W K H Q
UniRef90_UPI000262AD2A A I G D L A V W V G V V A A H R G A A F D A C R Y V I D E V K A R V P I W K R E
UniRef90_U5HG05      P V G T P S I I V S V S S P H R K E A F V A C E Y V L E Q I K D N V Q V W K R E
UniRef90_U1QE84      E V G D V A L G A A V S A A H R K E A L R V L E D V V E K V K L Q L P V W K R Q
UniRef90_C4GLV6      A I G E I A V F V G V S A A H R D A A F A A C R F I I D T V K A E V P I W K Q E
UniRef90_UPI00045E731A V V G E A A V V A V V S T A H R A L A F V V C S D L V D A V K A E L P V W K R E
UniRef90_C8Q194      A I G E M A V W V G V V A A H R Y P S F D A C R W L L D A I K A D I P V W K Q E
UniRef90_C3PJ66      E I G E S A F I V A A A S A H R K D A F E A S T C A D R V K A E V P I W K E Q
UniRef90_UPI0003FB0A03 K A G E I C L F V F V S S P H R K E V F E A M H H I V E E I K I K V P V F G K E
UniRef90_E8N6U8      D V G E A A V V I A V A S G H R A E A F E V C R R V I E T L K T D L P V W K R Q
UniRef90_M1Q1B9      E A G E N I F G I V I S A S D K E E A L E A G V N C L D R F N S Y V P L W K K E
UniRef90_T0MLD3      S T G Q L C I F V F V S S K H R A D A Q Q A C H E L V E I K K E L P I W G K E
UniRef90_W0F4C6      A A G E I C L F V F T S S K H R A A A I A A C G E A V E R I K K E L P I W G K E
UniRef90_F5XL96      E V G D L A V V V A T G A V H R G P A I D A C R A L I D D L K S T V P I W K E Q
UniRef90_K8EX82      E V E D P S V I I A V S S A H R E A S L D A V K W L I D E L K A T V P I W K K E
UniRef90_W6JSE5      A I G D I A V I T A V A A P H R D A F A A G R E L I D Q L K A T T P I W K H Q
UniRef90_C8X8U1      R V G D I A L A A A A S G A H R R E A F E A C M D L V D E V K R R L P V W K R Q
UniRef90_UPI0003B4475D R I G D V A L F A A A G A G H R A Q A F D A C E R L V E L I K Q E V P I W K R Q
UniRef90_UPI0003466352 E I G D A A V V V A A A A A H R Q E A F E A C R R L I D D L K A Q V P I W K H Q
UniRef90_D1BSZ5      A I G D A A V V A A V A S G H R R A A F A A V A D L V D E L K A E V P I W K E Q
UniRef90_W4KM18      P V G E P S I V I A V S S P H R R E A F A A C E Q I L E G V K A R A Q I W K R E
UniRef90_C0BFS7      K K G E L C F F V F V S G P H R K S V F K A L P Q I V D E I K D K L P I F G K E
UniRef90_G7UQW1      A I G E M A V W V G V S A G H R D G A F A A C R W I I D Q T K A R V P I W K Q E
UniRef90_A0A011PVY9  L P T D Q I V L V P I R S
UniRef90_UPI0003C7E709 E V G D V A V V I A V A S A H R A L A F D V C R D L I E A I K T D L P I W K R Q
UniRef90_V5ERI2      K V G E C S I L I A V S S P H R K E A F V V A E W L L E E V K K S V A V W K R E
UniRef90_L7LJI7      P V G G V A I V A A V S S V H R G D A F D L D R D L V E T V K A E L P I W K K E
UniRef90_J5JMI2      P V G E E S I L I A S S P H R Q A A W R A G E A A L E A C K E K V E V W K R F
UniRef90_E6S7V2      D I G D L A V V V G V S A E H R G E A F E V C R R L I D E L K A T V P I W K H Q
UniRef90_X1LN02      K V G D I N L V V V A V A S A H R G D G F T A C Q Y A I D R F K Q K L P T R K K E
UniRef90_F8I4L7      A V T D M A V V V A V S A A H R E A A M A A A R E G I D E I K R R A P I W K K E
UniRef90_UPI000255F23B D V G D L A L V V A V A S A P H R A E A F E T C R A V V E D I K A E V P I W K R Q
UniRef90_E5T2S7      A V K E K S V I V A A S A P H R A E T L D A V K F A I D E I K K T V P I W K K E
UniRef90_K6VNI9      R I G D V A V V A A V A A E H R G Q A F E A C H L L V D R L K A E V P I W K H Q
UniRef90_T2KIX7      K A G E I C F F V F V S A K H S K E V Y A A T E Y L V N I I K K K V P I F G K E
UniRef90_UPI0004411DD0 P V G E P S I V I A V S S P H R K E A F M A C E Q I L E E V K L K A Q I W K R E
UniRef90_L9VXU7      E D G E D I V F V V L A G H R G E A F R T V E D G I N R L K D E V P L F K K E
UniRef90_D5G1X8      R I G E A A L V V A V A A D H R R A A F D T C A L L V E A V K A R L P V W K H Q
UniRef90_S4XIL2      G I G D L A F L V V V A S A H R G P A F T A I E E F A T R V K S E V P I W K E Q
UniRef90_A0A024K5H5  H I G E A A L V A A V A A D H R Q E A F A T C A Q L V D T I K A R L P V W K H Q
UniRef90_B1L5Q7      P A G D I S L F V L T K S A H R K E A F E A A G W I V D E V K R S V A I W K K E
UniRef90_UPI00046409CB P V G E P S L Y L R V A A E R R G S A F R I A E E L I Q R L K A D V P I W K
UniRef90_L0JHQ7      E N G E D I V F V V L A G H R G E A F R T V E D G I N R L K D E V P L F K K E
UniRef90_A0A022LDL4  A V G E I A V V V A V A A P H R G E A F A A C S E L I E R L K R G V P I W K R Q
UniRef90_A0A011TYV2  E V G E A A V V I A V S T P H R A E A F E V C R A L I E A I K R E L P I W K R Q
UniRef90_Q5V2W7      D A G E D I V F V V I L A G H R T E A F R A V E D G I N R L K E E V P L F K K E
UniRef90_E8R9V1      K P G D T T I Y I V A L G V S R R N T N P A V S E A L E R V K K E T P I F K L E
UniRef90_A5FAY7      K A G E I C L F V F V S A A R R K Q V Y E A T E A I V N W I K T D V P I F G K E
UniRef90_A4YEG8      K P G D V I L I M T L G R G R K D S I D A I R E A I E L V K H T T G I W K L E
UniRef90_S7W4Q3      K I G D V A L S A A V A A A H R R E A F D A C E L L V E R I K S T V P I W K R Q
UniRef90_A0A021VTN2  A V G E A A I V A A V A T A H R H P A F D V C A A L V E Q V K A E L P V W K K E
UniRef90_H5UCB2      A I G D I A F V V A V A A D H R R A A F Q T C S R L V D E V K A R L P V W K H Q
UniRef90_G8RYD2      H I G D A A L V A A V A A D H R R A A F E T C Q R L V D A V K A R L P V W K H Q
UniRef90_L0I956      P A G E D I V F V V L A G H R Q A A F R T V E D G I D R L K D E V A L F K K E
UniRef90_W7KWC3      K P G D D V I L I M V M G K G R K D A I S A V G E A I E L V K H T T G I W K L E
UniRef90_D5UTV1      A I G D A A L V V A V S A D H R A A A F A T C A R L V D A V K E A L P V W K H Q
UniRef90_H6MR87      S V G D A A L V V A V A A D H R A A A F A L C A R L V D E V K A R I P V W K H Q
UniRef90_X1GFT5      E V S E D L V Y V V A S A H R K E G F E V I R N A V D M Y K K E I A V W K R E
UniRef90_A1RS95      K P G D T T I Y V F V S A I N R D I A F K V A R E A L E R V K H E V P I F K L E
UniRef90_UPI0003802D8F R V G D T A I V C A V A S A H R A D A F D V C R E V V E R V K H E L P V W K K Q
UniRef90_V6KCP1      A V G D L A V V A V S C P H R A E A F E A C R K L I D D L K H E V P I W K H Q
UniRef90_UPI0003B39D3B S V G E P A V I V A V S A A H R G E A F D V S R A L I E S I K H E L P I W K R Q
UniRef90_A0A021W303  A I G E L A V W V G V S A A H R D A A F A A C R F I I D E T K G R V P I W K H E
UniRef90_UPI00034D2F5E G I G D A A L V A A A S A H R R E A F E A I E R L V E R I K H E V P I W K R Q
UniRef90_M7MM28      Q I G D A A L V A A A H R Q A A F D A C R D L V E T V K A H V P V W K E Q
UniRef90_D5P1B0      D I G D L A F T V I A A A A H R R E A F E A A S Q L A D A V K A E V P I W K E E
UniRef90_D0WP36      D V G D V V M V V A V A A E H R S Q A F A A A E A L V D E V K A R L P V W K K Q
UniRef90_M5CV70      A V G E V A V V V A A G S P H R D E A F R A C R Q L I E A V K H R S P I W K Q E
UniRef90_UPI00046346D5 E I G D E A L V C A V A A D H R G Q A F D V C R E L V E A V K L E L P V W K L Q
UniRef90_U7KX13      Q V G D L A F A V V A A H R G D A F E A A E C A D R V K A E V P I W K E Q
UniRef90_A7RSI1      P I G E A S V I I A V S S A H R K E S L E A V S F I I D T L K A T V P I W K K V
UniRef90_D3D9E0      E I G D I A V V V A A G A A H R A E A L G A C R R L I D D V K E Q V P I W K R Q
UniRef90_X1H8V8      T P G E D A I Y L V A G E H R A E V F S A L P K I M D R V K T K A L I W K K E
UniRef90_UPI00037C0BC5 A I G D P A L V C A V A S A H R A A F S A C T E L V D R I K A E V P I W K E Q
UniRef90_D2NRK4      A I G E A L T V M A A A A H R G R A F D A C E L V A D R V K A R V P I W K E Q
UniRef90_H2C334      K P G D D V I L I M V L G K G R K E A I R A V E D S I E L V K H T T G I W K L E
UniRef90_Q9YEH3      R P G E T T I V A V V A G A S R G N V Y P G L Q R V V D R V K R E A P I W K V E
UniRef90_F4H5B4      E V G E A A I V C A V A T A H R A E A F D V C R A L V E R E
UniRef90_B4S5S9      P V G E A A I V V I M R S S H R K E G F A A M S W F M D E L K K V V P I W K
```

```
                                    130                     140
UniRef90_D8LKV7         V Y E G D S R W K E N A E
UniRef90_G2MME2         T T E A E E F W V H D R A
UniRef90_V4Y3U7         V T V E D E F W V H E R E
UniRef90_R9SP24         T R L D G S T W V G
UniRef90_U5BR26         I L Q D D S H W K V N R
UniRef90_X8AGT4         F F A D G D E W V G S
UniRef90_F0M808         F F T D G T E W V G A
UniRef90_W7BIB4         F D T D K I R W
UniRef90_D1Z1C1         K T V S G D Y W V H
UniRef90_F9NVB0         F L L E G G E W
UniRef90_A3HUS0         I F E E E S Q W K V N
UniRef90_E3B8I6         H L R D G S
UniRef90_U1PDS8         T T A E E E F W L H K R E
UniRef90_A0A022LNM2     R F T D G D E W V A A
UniRef90_UPI000262AD2A  R Y R E G D
UniRef90_U5HG05         F Y K D G E R W V G A G P E D E A E A E A W
UniRef90_U1QE84         F F A D G S E W T G A
UniRef90_C4GLV6         F Y T D G S
UniRef90_UPI00045E731A  V L A D G S H W V G S
UniRef90_C8Q194         F Y A D S T E W L S N N
UniRef90_C3PJ66         H T D D T T T W V G
UniRef90_UPI0003FB0A03  V F K D D S Q W K V N K
UniRef90_E8N6U8         V E A D G T Q W K G
UniRef90_M1Q1B9         T T I E G E R W V E K A D E L H
UniRef90_T0MLD3         L F E D D T H W K
UniRef90_W0F4C6         L F D D D T H W K Q N Q
UniRef90_F5XL96         H L T S G A V W V G
UniRef90_K8EX82         F F E D G E V W K E N S E
UniRef90_W6JSE5         L F G D G E E W V G
UniRef90_C8X8U1         V F S D G S E W V G S
UniRef90_UPI0003B4475D  H F A D G S E W V G
UniRef90_UPI0003466352  S F E D G D E W V G
UniRef90_D1BSZ5         G F T D G S E W V G A
UniRef90_W4KM18         F Y E G E S E W K T N
UniRef90_C0BFS7         I F K D A S H W K I N Q
UniRef90_G7UQW1         H Y S S G D Q W L H P
UniRef90_A0A011PVY9
UniRef90_UPI0003C7E709  V D Q Q G
UniRef90_V5ERI2         F Y A S G D S I V A
UniRef90_L7LJI7         I E S D G S H W V G
UniRef90_J5JMI2         E G E E E G V W R A N R D
UniRef90_E6S7V2         G F S D G S E W V G
UniRef90_X1LN02         T Y Q D G S V W V
UniRef90_F8I4L7         L F D D G D E
UniRef90_UPI000255F23B  H T A S G D H W V G
UniRef90_E5T2S7         V Y V D K S K W K A N
UniRef90_K6VNI9         V F T D G D E W V G
UniRef90_T2KIX7         I F E D D T H W K T N
UniRef90_UPI0004411DD0  F Y E E D A E W K A N
UniRef90_L9VXU7         V T V D D E F W V H E Q
UniRef90_D5G1X8         F F A D S D E W V G S
UniRef90_S4XIL2         E H T D G S T W V G
UniRef90_A0A024K5H5     F F D D G D E W V G S
UniRef90_B1L5Q7         I F S D G E R W V
UniRef90_UPI00046409CB
UniRef90_L0JHQ7         V T V E D E F W V H E R
UniRef90_A0A022LDL4     R F T D G S E W V G V G D C
UniRef90_A0A011TYV2     L T A D G A
UniRef90_Q5V2W7         V T V D E E F W A H E R
UniRef90_E8R9V1         K R S D G E Y W V V G D G V R Y R R A S R
UniRef90_A5FAY7         M F E N D T T W K Q N
UniRef90_A4YEG8         V R D D G E F W V V A
UniRef90_S7W4Q3         R F V D G T E W V G
UniRef90_A0A021VTN2     V L A D G E H W V G
UniRef90_H5UCB2         F F D D G D E W V N S
UniRef90_G8RYD2         F F A D G E E W V G S
UniRef90_L0I956         V T V D D E Y W A H E R
UniRef90_W7KWC3         V R D D G Q F W V V A
UniRef90_D5UTV1         M F A D G D E W V G C
UniRef90_H6MR87         F F G D G D E W V G S
UniRef90_X1GFT5         D F K D G S E W V H
UniRef90_A1RS95         R R D D G E F W V
UniRef90_UPI0003802D8F  V E A D G T H W V G
UniRef90_V6KCP1         T F S D G E E W V G A C
UniRef90_UPI0003B39D3B  I E A D G T T W K G
UniRef90_A0A021W303     R Y A D G E E W L H P
UniRef90_UPI00034D2F5E  H F T A G S E W V G
UniRef90_M7MM28         F F A D G E E W V G S
UniRef90_D5P1B0         L S S G G T Q W V G
UniRef90_D0WP36         I M A D G S H
UniRef90_M5CV70         H Y Q D G S E W S E G C S L C Q P S A E
UniRef90_UPI00046346D5  V F G D G E E W V S C
UniRef90_U7KX13         S H G D G S T W V G
UniRef90_A7RSI1         I
UniRef90_D3D9E0         G F A D G S E W V G A C
UniRef90_X1H8V8         V T E T G E Y W I H
UniRef90_UPI00037C0BC5  F F T D G T E W V A A
UniRef90_D2NRK4         E L L D G S E W V G
UniRef90_H2C334         V R D D G E Y W V V A
UniRef90_Q9YEH3         Y R E G G
UniRef90_F4H5B4         I L A D G S H W V G
UniRef90_B4S5S9
```

Multiple sequence alignment (residue positions 1, 10, 20, 30, 40 marked)

```
                                 1        10        20        30        40
UniRef90_W5WRP0          V H A E V T D A P L E P L A D A K R T T A T E A M G A L V T F E G I V R V T
UniRef90_J9YT24                              E K F I A S S K F G A S I F F T G T V R V T
UniRef90_S3WWE5        H V R T A V V E T P L D   A A A I T A N I E N P R C G A V V T F   C G V V R V I
UniRef90_UPI00036A89FA       A I S A E P L D L D A H L R A V   D D P R M G A V T T F V G R V R D H
UniRef90_Q2J6F6               E I R D G V L S V D E C M A A V R S   P G V G G I A L F V G T V R V T
UniRef90_W4VLA0
UniRef90_M1P3M4                      L T V T E A M G A L V A F E     G V V R D H D G G R R V S
UniRef90_M4FR29        K C Y V A L T N D R L D V Q A V M D R V R S   P E A G A I V V F V G T T R V K
UniRef90_W7DAC9          V R L Q H E P I D V G S S Y Q A L V   N A K F G A V N M F V G T I R E W
UniRef90_I4BPC5        V R V A L T E H P I D S P E H E A A G A V V A F A G V V R D H D G G R G V T
UniRef90_E3GZP9                                E A M G A L V V F D G I V R V R
UniRef90_UPI0003677D81            A L D L I R N F L S L C S N G E G S G A T L F F I G I A R V K
UniRef90_UPI0002192F80      I V D T P L D L L P A A R R D T A T D A T G A V V T F E G V V R V T
UniRef90_H0QYW7             I V D E P L D P R G C E G A V R T D A D   G A V V T F T G V V R V T
UniRef90_A5G7D2        V I V S T E P I N P S E A Y   G L I E K S R S G S V V L H Y A V V K T S
UniRef90_W9DZ44               E K I E I S K A E S F L N Q S   K F G A V I Y F V G T V R V T
UniRef90_Q3A7U3        V Y V V K E P I R P E E M Y E K L T   K N T A G S V L L H Y A V V K T K
UniRef90_E6ZXR3        D E A V L T Y D V L D E K E A V S   F V A D N G A G A T V L F S G T T R V T
UniRef90_X1MAM4
UniRef90_UPI00036FEBE7 V H A S V R D E A V D P A G L M   A L V A R P D A G A I S L F V G V V R V V
UniRef90_J4G0R6              L T H A P L A V E D I I K S V   E D D R A G A T A V F I G T T R V R
UniRef90_Q4FML1                         E A E A F I K S S T Y G A S I I F T G N V R V I
UniRef90_S5ZK45                  E K I E P A Q L L G D F L G S R E A G A V T I F T G R I K V N
UniRef90_Q0I642        E I T V E I H S Q P F D P W   I R L S E W S S T A A A S A S F S G R V R D E
UniRef90_F9EIH0        V R A E I T C A P V S V A G L A A A V   E D Q A A G A V V T F D G M V R V S
UniRef90_D4YL47               R I T R D P C L T D A   A S T V V T P E C G A V V E F S G V I R V V
UniRef90_D0L5J6        I R A E V A D T A I D L M E H E R W V A E A A A V G A V R D H D H G R G V R
UniRef90_T1A2Y6
UniRef90_UPI00047AB16B   A V Q E G E L S T S V A E A A V A G   D A F G A V V S F S G V V R D H
UniRef90_X0QS07
UniRef90_B4CUD7                              E I G A C V E F Q G L V R L A
UniRef90_W2LHJ4                                                          K V V
UniRef90_M5TL85        S T V R V R L S R G P I G L A N P I M L S R S Q T A A G A V M T F R G C V R S S
UniRef90_I5C7M4                 V G S L V A A Y E Q Q G G I G A H A I F L G R I R V R
UniRef90_UPI0001746BB1                   A A E E G A E V Q F L G T V R I S
UniRef90_S5TGC6                                 G V V R D H D G G E R V A
UniRef90_A0A024J501      V L L T M D P L V P S T G I D F V K K T P E A G A V V Y F G G I T R V Q
UniRef90_UPI00036910D3
UniRef90_Q749P3          V I I T D T P I D P T S A Y   G L L S K G T S G S I V L H Y A V V K T A
UniRef90_I6X4I4         I H A A I T T D P I D Q S R   L E A L V S S A H A G A R V S F T G L I R D H
UniRef90_F4S787                                                        G R T V T
UniRef90_C1N7M8
UniRef90_D9PVE6              D L L E H V K K S P Y L D E C G A V F T F E G I V R G V
UniRef90_V4Z740         Q E Q P F       Q R E D D E A V Y D             V V
UniRef90_D1JC01         I T E Q E I S I D G A V R A M   K K L G I G A I V T F I G V V R V E
UniRef90_UPI0003B32C85
UniRef90_UPI0003B5AFA1  V K I T E K P L A D P S S S P G I A D I P A S G A R V V F N G C V R V T
UniRef90_H2GVM7           I T E E P L E A L V H N A R S Q V T D A M G A V V T F D G I V R V K
UniRef90_E7FZA6        E I I A G A L N T E A L Y K S L C S K Q N C G A L C V F T G V V R A E
UniRef90_A6Q5I2            L D V D K I F S R W R E T K N Y G A F I T F V G I V R I E
UniRef90_L0HP15                              R M G S I V V Y F G Y V R V H
UniRef90_K2RUM9             D L T K Q I K K S S S I R E C G A I F T F E G I V R T D
UniRef90_F8AJY2             V D E L I E K Y   K G D M G C H V S F T G F V R N Y
UniRef90_K6VP77        V R A A L A E T A I D L P S H E A L V T D A A G V G A V R V R N H D G G R E V T
UniRef90_T0M2B8        N M E P V I T D D R I D L P D F M A D S N P D N R S A V F S L F S G F P D V M
UniRef90_UPI00034F8D78 S K D I I K C T A E K L   L V D E V S Q L V I S P V C G A V S L F V G T T R N N
UniRef90_Q9ZL44          K I V Q G A L D T D K L L K D Y Q E E A N F G A F C V F V G I V R V Q
UniRef90_N1UXN4        H A E V S A E P L D V A A A M A A   A E S A E C G A V V T F S G V V R V A
UniRef90_B9CZN7            I F E G S L D A K A I T N A W Y D D K N C G A L I T F T G I V R E E
UniRef90_U6EDU7              D L T K K I K E S P S I D E C G A I F T F E G I V R G K
UniRef90_G0SVP6          L S Y A P L D P A A   I E Q S C R S E K D G A V V S F V G Y T R V T
UniRef90_W8KG69        F V L T N N A L D I P Q I Y A K F A K D K N C G A L L T F C G I V R I E
UniRef90_Q7M953            L D T K A L Y D R W A S K R N F G A C L M F T G V V R D E
UniRef90_UPI000381A41A            E K F I K D F D A G A S I F F V G N I R V T
UniRef90_W1TRX3        V K M T E E S L D L S S S M G V A G I P A T S G A R V V F N G C V R V T
UniRef90_I0RHZ3        R A D L S E L P I D L G E H E A L V A D A A A A V G A V V R N H D G G R S V T
UniRef90_UPI000420AE44 V I I T S D Q I D P S K I Y D S I P A   E T A G S I V L H F A V V K P Q
UniRef90_G2HZB2            L P V E E I T N K W Y K K S N Y G A I I T F V G V V R D E
UniRef90_D5V6L1                       K N S N Y G A I I T F V G V V R D E
UniRef90_B6BG97        E G P L D V A T I L K E W Y E Q E A T G A Y I P F V G T V R I D
UniRef90_V4Y0R2           S L V A E V K R S P R E D R A G A I A T F T G R V R T E
UniRef90_A0A053D6Q3                                                      V L
UniRef90_A6Q6G2            P L D V K E I F G R W L D E E A Y G A Y I P F V G T I R A E
UniRef90_J0S0Q0              V V R E L R R S C P A E R A G C I L S F N G L V R E I
UniRef90_C3XM85        Q D S L L I F E G A L N T T E I Y T A F G A E N N F G A N A I F T G I V R A E
UniRef90_M3J892
UniRef90_UPI00047CBAA5                       N Y G A F I T F V G I V R D E
UniRef90_UPI000478C7FA              S A Q A N L G A S A I F T G I V R R C E
UniRef90_A5UJF7        M V V R V I E A K E D M A D L I A D L K K S N K V G A I I F T F E G I V R V K
UniRef90_D6F2E3        R A A L T D Q P I F L A E H   E E L V S H R S A G A I V G F V G M I R V L
UniRef90_D3S5L4                         K G K F G C I V T F N G F V R
UniRef90_UPI00046E8006  I E I Y K G G L D T D A L Y K K W Y D T Q N L G A F I T F S G V I R V E
UniRef90_K4RLN3          E V F D G A L D T N A L Y S K L C A A K N L G A L C V F S G F V R L E
UniRef90_W6EJ56               L A A W Y D Q I S E Q N   Y G A F I P F V G V V R D E
UniRef90_E8QRZ8        K I I Q G A L D T D K L L K A Y Q E E A C A G A F C V F V G I V R I Q
UniRef90_E6LBG2        F E I H K G A L D I S L I Y T K W Y E D K N C G A F L S F C G I V R V E
UniRef90_D8EW02                  L K G H S E S S K M G M I A S H L L G I V R E T
UniRef90_C9RHD3                       R G K F G C V I T F N G F V R E Y
UniRef90_UPI0003B7A48C                       G C V V E F N G F V R L K
UniRef90_D3PDD1        N I V V R L E E N K I D V A K L Y N E F S V S D S T G T I L I H H G K A K Y P
UniRef90_H1YXY6                     T E L P K T G C I I T F N G F V R E I
UniRef90_D5VQM9            F D N L E E Y K K Y I E K G E Y G F I L N S S G Y V R V E
```

```
                             50              60              70            80
UniRef90_W5WRP0        A L T Y T A H P Q A T D   F M R E V V E S V V S G H P E V R A W A A H R T G P L
UniRef90_J9YT24        G I T Y D S H D A M V I K S F K E I   Y E E T E Q K L N I K D V Y I E H V K G Y L
UniRef90_S3WWE5        A I D Y S A H P S A G   P I M K D I A D R V V Q D H G V H A I E A W H R V G R I
UniRef90_UPI00036A89FA A L E Y S A H P D A P   T A L A R L A H A E A V G Q T G   A I V A V S H R V G T L
UniRef90_Q2J6F6        D L T Y Q A H P R A G   T E I A R V A G D V A A T A P V L A V A V V H R T G H L
UniRef90_W4VLA0                       M L M Q I G K E I   Q E K W Q G T K V A I T H R I G S L
UniRef90_M1P3M4        T L S Y T A H P S A D Q R   I R E V T E S V M A A H P R T R L W T A H R T G D L
UniRef90_M4FR29        E L Q Y S A Y N P V A L R S M M S I A K D A V E K H G L K G I   A M V H R L G V V
UniRef90_W7DAC9        T G E Y T A Y K E M A M K E L S K L A H E V E V K Y D   A D V I V I H R L G E L
UniRef90_I4BPC5        R L E Y S A H P T A E Q T L S E V A A E I A A T C Q G V R A I   A V S H R I G T L
UniRef90_E3GZP9        G L S Y S A H P Q A K E   Y I A R V V Q S V A D E L E G V R L W A V H R V G P I
UniRef90_UPI0003677D81 Y I E M E S Y V E H A N N A I L K I C E E I K R K Y S L N E I   Y I W H F I G K F
UniRef90_UPI0002192F80 A L T Y T A H P D A   E R V M A E V V A A C V R D H P G V R V W A A H R V G P L
UniRef90_H0QYW7        A L R Y D A H P R A A E F L A H V C A   K Y R T G D I   R V A A Q H R I G D L
UniRef90_A5G7D2        C I D Y R S   E G D T K A E L G I I S G E L K E K W E I   E D V L L I R R T G C L
UniRef90_W9DZ44        G I T Y D A K E S L V I K S F E E I   Y E E A D N K L N I K E V F I E H V K G V V
UniRef90_Q3A7U3        G V E Y   C R N G D M E T E M A G I I E Q L K N R W Q I   E D A L L I R R L G C L
UniRef90_E6ZXR3        R L E Y E A Y T S L A L K T L Q T L L S Q A H T S A P V T R C Y V A H R L G A V
UniRef90_X1MAM4                    E N R L L E I A S E A R Q K W Q L N N I   A I C H R I G K L
UniRef90_UPI00036FEBE7 A L H Y T C H P S A P A R I G E I A A G V L A E A D P G C S V A T V H R V G E L
UniRef90_J4G0R6        R L D Y Q A Y S K L A I K T I A D I   V R A A H A T H S L I R S V V Y H R L G T V
UniRef90_Q4FML1        G I   A Y D S H D E L V L K S F E E I   Y K E T T E K L K I I   D V F I E H I K G Y V
UniRef90_S5ZK45        S L V Y E A A E P Y S T Q S L E K I   A R E E L E K N G L L G I M I Y H K K G E A
UniRef90_Q0I642        A L E L T H Y P G L C E S L I R E D A E R L L M L H G A T G A L V I   H R V G R L
UniRef90_F9EIH0        G V A Y C A H P S A G G   I V A R I A D E V A G R P G L R A L A V V H R V G D L
UniRef90_D4YL47        G L D Y T C H P D A   E E M L A Q V V G E V A Q A H P G T R V L C E H R V G S L
UniRef90_D0L5J6        A L S Y S S H P T A P   R V L A E V V A E V T L D A E I   R A V A V S H R V G D L
UniRef90_T1A2Y6        E Y E G Y E E Q L V P S F L K I   A N E A M S R F G V L K V A I   H H R L G L C L
UniRef90_UPI00047AB16B D E K Y S A H P S A S E E I   A E E I   V R E Y A E M E H P V Q V W V E H R V G Q L
UniRef90_X0QS07        M T Y Y G Y E D L A I N Q G R A I   I E E A K K R F E I T H A I   A I   H R I G A L
UniRef90_B4CUD7        G L H Y E A H E S M A R K H L E R I   F D Q L C A A H P C A A V V F I   H R L G W V
UniRef90_W2LHJ4        R L E Y E G Y T P M A V S E L R K I   C V I V R E K W P V V G V A L F H R L G V V
UniRef90_M5TL85        G L E Y E I Y E P M T S R E L   H R L A V Q F A R K F G V I   A V D V E H S F G F V
UniRef90_I5C7M4        A I Q F S T Y K E M A Y K E F E S I   A K D L S A R Y E I   Q D L T V I   H S E G E V
UniRef90_UPI0001746BB1 G I   D Y S V Y R P M A E K E L E R L C Q R G Q A E Q L P H R V F I Q H R L G F V
UniRef90_S5TGC6        S L T Y S A H P T A D D R   I   A E V T A S V I   E A H P N T R L W T A H R T G Q L
UniRef90_A0A024J501    H L A Y D C Y V P M A L R T L E R I   A K E V L A E S Q V C K I   Y L A H R L G T V
UniRef90_UPI00036910D3               A L Q A L H D E A L E R F D I I D A R I I   H R V I T V
UniRef90_Q749P3        C I D Y R F D A G A I E   E L E A I   S A E L R Q Q W Q L E D V L L I R R E G C L
UniRef90_I6X4I4        D E E Y T C H P D A   D R F L A G V A A S V A S D E G R A V L A V E H R I G S L
UniRef90_F4S787        Y L S Y E S Y A S L A I K T L I L E I I K E A R N Q A N D S K I   V I   H H I L G E C L
UniRef90_C1N7M8                    M A L K T M R A L C R L A R L R W G L L R I   A I   A V V G V V
UniRef90_D9PVE6        D D E T T P D I E K A Q R E L E G I   V E D V M E K Y P V R D V A V V H Y V G E F
UniRef90_V4Z740        A L D L E C Y T S M A I K G L L A I C S T A R Q S F P V E R I   A V S H R K G R V
UniRef90_D1JC01        G M E V E V K D N A   Q A E L E Q L K R D A F D T F D I   E A V E I I   H R H G L L
UniRef90_UPI0003B32C85        E K E I   Q K I V D E A K R F K V D E I I V K H R I G Y V
UniRef90_UPI0003B5AFA1 H L I Y S A H P E A E K F L I K A V R D A I Q F S L P L D A V F V R H R I G R L
UniRef90_H2GVM7        H L T Y S A H P T A   E A E L H K V L A E Q I K N H P D A R V W A A H R V G K L
UniRef90_E7FZA6        G E S F D I Y P P L L T N W F N Q W   E Q K A K A L G V Q L C M A H S S G D V
UniRef90_A6Q5I2        A L S F D I Y E P I L K K W F D T W Q E R A K Q K   G A Y V C M A H S I G N V
UniRef90_L0HP15        G M T A E K T Q E   S E K I M K K I E N E I K T K F P I E N V V L Y H S V G D L
UniRef90_K2RUM9        K L A L T T P D T A K E N E L E N I   L V Q V Q E K H G V N D I   A V V H Y L G Q F
UniRef90_F8AJY2        N I D K E G H K P D I L D I L E D I R K D A L E K F N L L D V A I   Y H N K G T L
UniRef90_K6VP77        R L V Y S A H P T A P Q I   L A D V V G A V A E D A T G V R A V A V S H R V G D L
UniRef90_T0M2B8        G I Y Y E T D Q E T A L R V L K R I R S D A M D R Y P V T D I   S V I L R T G K I
UniRef90_UPI00034F8D78 S E                   G K K V I S L E Y E A L V
UniRef90_Q9ZL44        G L S F D I Y E A L L K T W F E K W   R H Q P K D L G V V L K M A H S V G D V
UniRef90_N1UXN4        A L G Y S A H P S A G   R V I A E V A A D I A Q K H D G V R I   W V A H R T G A L
UniRef90_B9CZN7        G G S F D I Y E P I L R K W L A G W   E Q K A K D L G A Y V L F A H S R G D V
UniRef90_U6EDU7        D E A L T T E P S K T E E E L V D I L H Q V Q E K H G V K D I   A V V H Y L G H H F
UniRef90_G0SVP6        H L T Y E S Y V P L A L K T L E S L L A E A R T R I E I S R I   H V A H L L G P S
UniRef90_W8KG69        A L S F D I Y E P I L K K W F D E W   Q K R V K E L G I L L F A H S I G D V
UniRef90_Q7M953        G L S F D L Y E P I L R A W F E R W Q E K A K A Q G A L F C M A   H S I G D V
UniRef90_UPI000381A41A G I T Y D A F D R L V I K T F K K I Y A E K K F K L K K V K V F I E H A K G Y V
UniRef90_W1TRX3        H L I Y S A H P E A   E K F L V K A V R D A I Q A E S L D A V F V R H R I G R L
UniRef90_I0RHZ3        R L E Y S A H P T A A K T L A E V A A E V A A Q A T G V R A I A V S H R I G D L
UniRef90_UPI000420AE44 T G E Y I D Y Q G D A E A E L R T I A E E L E R S F R L V D T L L I R R T G R L
UniRef90_G2HZB2        G L S F D I Y E P I L N N W F D E W Q K K A N K K   D A I   V L M A H S R G D V
UniRef90_D5V6L1        G L S F D I Y E P I L N N W F N S W Q D K A N A Q   N A I   V L M A H S R G D V
UniRef90_B6BG97        G L S F D I Y E P I L K K W S D W Q D K A K E K G A V I K M A   H S K G D V
UniRef90_V4Y0R2        Y L E F E R Y D G V A Q E R M A Q L R E E L E A R E G V H E V R L H H R T G V V
UniRef90_A0A053D6Q3    R L E Y S A H P S A A Q V L A D L V A E V A E E S S G V R A V A A S H R I G V L
UniRef90_A6Q6G2        A L S F D I Y G P V L Q K W F D E W Q E K A E A R G A V V K M A   H A I G D V
UniRef90_J0S0Q0        T G E Y M D F S P S I D P L I R E I E A A E T P G V I G A R F H H R K G R L
UniRef90_C3XM85        G L S F D I Y T P L L E Q W F N A W C K   K A Q K H D T Y L K M A H S K G D V
UniRef90_M3J892                    M A Q L E M E K L A K D V E E K F D   A R V V I V H R L G E L
UniRef90_UPI00047CBAA5 G L S F D I Y E P I L K S W F D S W Q K E K A Q K Q N A I V F M A   H S L G D V
UniRef90_UPI000478C7FA G L S F D I Y E P I L L E Q W F K K A L E S E V V L K M A   H S R G D V
UniRef90_A5UJF7        E E N M T P D K E K T L K D I E N I I K E D A K I K F N V F E I S V I H Y I G E F
UniRef90_D6F2E3        R L E Y S A H P S A A Q V L A D L V A E V A E E S S G V R A V A A S H R I G V L
UniRef90_D3S5L4        E Y D H I D D D I L E K L K L I I E D A K N K F D V I E I   L F Y H N T G F L
UniRef90_UPI00046E8006 A L S F D I Y E P I L N W F N G W V K D E R V E N E K I R L F F A H S F G D V
UniRef90_K4RLN3        G L S F E V Y M P L F E A W F S T W   Q E R A N V Q E V Y L C L A H S K G D V
UniRef90_W6EJ56        G L S F D I Y E P I L N N W F N A W Q E K A K A Q   N A Y L L M A H S R G D V
UniRef90_E8QRZ8        G L S F D I H E A L L K A W F E K W   H H R A K D W G V T L L K M A H S L G D V
UniRef90_E6LBG2        A L S F D I Y E A L L F K G W E E N Y K K E   G V K F F F A H S L G E V
UniRef90_D8EW02        S L R G D P V K G I N I R A I E N I V D K A K E M S G I I E V L V D T C D G E L
UniRef90_C9RHD3        S T D G M S I E K D I F K K L E P I   L E E A K R R F G I I   D A L F Y H N T G F L
UniRef90_UPI0003B7A48C G G E V V P A E G M F I K H L E D I R K K T I E K F G L I E V I Y H N Q G F L
UniRef90_D3PDD1        G K Y L T I I D D E A L N K I N E Y A H K I F D R F D L N K L F V V H Q V G V I
UniRef90_H1YXY6        T G E L E T P T D K L K I I S G V T E D I K S R K G I L G A R I   H N S G R I
UniRef90_D5VQM9        G R K I E V N I N V N L E I L L K N I G E E L K K K Y N L L E L A I Y H N N G K L
```

```
                          90            100           110          120
UniRef90_W5WRP0     R I G D L A F A V V V A A A H R G P A F A A A E E I A D R V K A E V P I W K E Q
UniRef90_J9YT24     K L G E M S I I I A V A C K H R D Q A Y I L S R Y I I E E I K K R S P I W K K E
UniRef90_S3WWE5     T V G E V A M V V A A A A E H R A Q A F A A V Q S L V D E V K T S V P V W K C Q
UniRef90_UPI00036A89FA A V G D A A V V I A V A S A H R A E A F E V C R T L I E T I K T G L P V W K R Q
UniRef90_Q2J6F6     A V G D T A V I V A V G A A H R A E A F A A C R R L I D D I K E Q V P I W K H Q
UniRef90_W4VLA0     D I S E V A V V I A V S S P H R K A A Y Q A N E Y A I E R I K E I V P I W K K E
UniRef90_M1P3M4     A I G D I A F A V V A A A A E L A D R V K A E V P I W K E Q
UniRef90_M4FR29     P V G E D S I V V T V S A P H R Q A A W R A G E E G V D
UniRef90_W7DAC9     Q L T D I A V F I G V A T P H R A A S Y E G S R F I I E E L K K
UniRef90_I4BPC5     H I G D A A L V A A V A A D H R G A A F E T C S R L V D A V K A R L P V W K H Q
UniRef90_E3GZP9     A I G E S A L T V L A A A A A H R G R A F E A C E A V A D R V K A A Q V P I W K E Q
UniRef90_UPI0003677D81 E V G E P L V I A V S A K H R E E A I D G L K E A V E R Y K R E P A L F K K E
UniRef90_UPI0002192F80 G I G D L A F A V C A S A H R G P A F A A V A D V A D R V K S G V P V W K E Q
UniRef90_H0QYW7     R I G D V A V V V A V A T P H R A E A F T L C A K V I D E I K T Q V P I W K F E
UniRef90_A5G7D2     G V G D I I S L V A A S S P N S E D A F E A C K Y G I S R L K K M A T I K K Q E
UniRef90_W9DZ44     G L K E K S I I I G V A C K H R D Q A V L S R Y I I E E I K K R S P I W K K E
UniRef90_Q3A7U3     K T G E I I S L I A V S S P N S A D A F E A C Q Y G I S L L K K M T T F V K K E
UniRef90_E6ZXR3     G V G E C S I L I A V S S P H R K E A F V V A E W L L E E V K K N V A V W K R E
UniRef90_X1MAM4     K V G D I N L V I A V A A A A H R Q E G F A A C Q C V I D Q F K Q T I P T Q K R E
UniRef90_UPI00036FEBE7 A V G D V A F V V A V S S P H R R L A F A V C E R V E A V K A D L P V W K Q Q
UniRef90_J4G0R6     P V G E P S I V I A V S S P H R K E A F T A C E Y I L E E V K L K A Q I W K R
UniRef90_Q4FML1     G L G E T S I I I A V A C K H R D E A Y V L S R Y I I E E I K K R S P I W K K E
UniRef90_S5ZK45     F P G E P V L F I A V A S V S R K E A V N G L Y T V L E R V K H E A Y V W K L E
UniRef90_Q0I642     S P H E V I V L V A V E A D R R G P A Q R C C M A L L E A I K H Q A P F W K K E
UniRef90_F9EIH0     R V G D T A L G V A V S A D H R A P A F E A V R E V V E E V K R L L P V W K H Q
UniRef90_D4YL47     Q V G D V A I V V A V A A A H R K A A F D C C E D V V N Q V K A R V P I W K Q Q
UniRef90_D0L5J6     V V G D A A F I V A V A A D H R R A A F E T C A R L V D E V K A R L P V W K H Q
UniRef90_T1A2Y6     A L G E S S V I I G V S S E H R E S G F V A S K F C I D T L K Q T S P I W K K E
UniRef90_UPI00047AB16B A I G D A A L V A A V A G A H R R E A F A A C A E L V E R V K E R I P V W K E Q
UniRef90_X0QS07     E I G D V A I W V G V V S A H R Y P A F D A C R W I L D T I K A D I P V W K Q E
UniRef90_B4CUD7     P V G E A S L F V R V L S S H R G E A L R F L A D A I D R M K A D V P I W K C
UniRef90_W2LHJ4     E V A E A S V V V A V S S P H R R E A L E A C A F A I D T L K A T V P I W K S E
UniRef90_M5TL85     G N G E C S F V L Q V A T S H R R E A I A F I D E F I D A M K R H V P I W K V P
UniRef90_I5C7M4     A V G Q L C M V I F V A G A R R D A T L S A E R E L V E R V K F D L P I W G K E
UniRef90_UPI0001746BB1 A D R E P S I L I R V W T K H S A E A F E I C R W Y L K E I K T I V P I W K K P
UniRef90_S5TGC6     Q I G E T A F L V V A A A A H R A A G A E L A D R V K A E V P I W K E E
UniRef90_A0A024J501 P V G E E S V L V V V S T P H R Q E G W A A A E R A L E H I K V A A E I W K N E
UniRef90_UPI00036910D3 H A G D Q I V L I V V G A E H R K P A F E A C E W L I D E L K Q R V P I W K K E
UniRef90_Q749P3     G V G E I I S L A A A S S P N S E D A F S A C R H G I A R L K K M S T V H K R E
UniRef90_I6X4I4     G V G E V A I V A V A A S A H R D Q A F E L C R T L V D R V K A E V P I W K H Q
UniRef90_F4S787     P I G E T S I I I G V S S A Q R L G A F E L C Q N L L E R V K K D V Q I W K R E
UniRef90_C1N7M8     G V G E T S V I I A A S S A H R A D A I E A V G W I I D E L K A T V P I W K K E
UniRef90_D9PVE6     Y V S E T L F M V A V A G P H R G E T L E A L K E I I E R T K Y E I D F K K E E
UniRef90_V4Z740     A V G D P A L I V C T S S P H R S A C M G A C S L V V E L V K H H L P F W K E E
UniRef90_D1JC01     E V G D V I V A I L V G A K H R T D A F R A C E Y L I D L L R I N E A I R L K E
UniRef90_UPI0003B32C85 D V G E I S F L V I V L S P H R E E G F N A I K F I I D E V K R K A P I W K K E
UniRef90_UPI0003B5AFA1 E I G E T A L L V V V D A P H R V A A F K V S T E I V D Q I K A Q V P I W K D Q
UniRef90_H2GVM7     Q V G E A A F I V I A A A A H R Q A A F S A A S A I A D A V K A H V P I W K E Q
UniRef90_E7FZA6     F I G Q S S Y M T G L I A A H R K S A L E L Y A D F I E D F K H N A P I W K Y D
UniRef90_A6Q5I2     P V H T S S Y M S A V F S P K R R V A L E L I D E F V E D F K A N A P I W K Y D
UniRef90_L0HP15     R V G D L L A A V V I S S V H R K E G F E A C R Y G I D R I K E L E P V R R K E
UniRef90_K2RUM9     K P G D P L F L V A V S G G H R H E T R A A L E E I I E R V K Y E L D F K K V E
UniRef90_F8AJY2     K V G D V V S S I Y V F A R H R K E G F L A C E Y I I D K I K K Y
UniRef90_K6VP77     A V G D V A F V V A V A A D H R R A A F D T C S R L V D E V K A Q L P V W K H Q
UniRef90_T0M2B8     S I G D Y V S I V M A W G R R S D D A F S A C K F V A E E I A S E V P M W K Y E
UniRef90_UPI00034F8D78 P V S E A S I I I A V S S A H R A A S L A D V S Y A I D T L K A K V P I W K K E
UniRef90_Q9ZL44     L I R H S S F L C V L M G A N T K N A L K L Y E Y F F K N F K R N A P I W K C
UniRef90_N1UXN4     A I G D A A L V A A V A S A H R A A A F A A A A E L V D T V K E R V P V W K E E
UniRef90_B9CZN7     P V H E S S Y V A G V V S L Q R K V A L R L I N E F V E D F K A N A P I W K Y D
UniRef90_U6EDU7     K P G D P L F L A A V S G G H R Q E T R A A L E E L I E R V K Y E L D F K K E E
UniRef90_G0SVP6     P P L T P S I V I S V T S P H R R E A F Y V C E W M L E M V K R R V Q V W K R E
UniRef90_W8KG69     K T H E S S Y L A G V L S K Q R K L G L K L I N E F V E D F K A S A P I W K Y D
UniRef90_Q7M953     P N H E S S F A A A I L S P K R R V A L E M I E Q F V E D F K A N A P I W K Y D
UniRef90_UPI000381A41A S L G K P S I I I A V S C K H R S E A Y Q L S R Y L I E Q I K I R A P I W K K E
UniRef90_W1TRX3     E I G E T A L L V V V D A P H R A A A F N V S A E I V D Q I K A Q V P I W K D Q
UniRef90_I0RHZ3     E I G D A A L V A A V A A D H R A A A F Q T C A R L V D V V K E R L P V W K H Q
UniRef90_UPI000420AE44 C V G E I I S L A A A S S P N S E D A F A A C K Q G V A R L R K M Q T I V K N E
UniRef90_G2HZB2     L N H E S S Y I A A V C S P K R R V A L E L I D E F V E D F K A Q A P I W K Y D
UniRef90_D5V6L1     L N H E S S Y I A A V C S P K R R V A L E L I D E F V E D F K K S A P I W K Y D
UniRef90_B6BG97     M L H E S S Y I A A V F S P K R R V A L E L I D E F V E D F K A S A P I W K Y D
UniRef90_V4Y0R2     E A G D D I V F V V V L A G H R G E A F R T V E D
UniRef90_A0A053D6Q3 Q V G E A A L V A A V A A D H R R A A F G T C A H L V E T I K A R L P V W K H Q
UniRef90_A6Q6G2     P I H T S S Y V S A V F S P K R R V A L E L I D E F V E D F K A N A P I W K Y D
UniRef90_J0S0Q0     Y A G E D I T Y F A I L A E H R Q E A F L A M S R A I D R L K S E A
UniRef90_C3XM85     L N H Q S S Y M A G V F S S Q R R A T L G I F E D F I E D F K H N A P I W K Y D
UniRef90_M3J892     A L S D I A V F I G V A T K H R A E S Y E G S R Y I I E Q L K N Q V P I W K E E
UniRef90_UPI00047CBAA5 L N H E S S Y I A G V C S P K R R I S L E L I D D F V E D F K A N A P I W K Y D
UniRef90_UPI000478C7FA L N H Q S S Y M A G I F S S Q R R A T L D I F E E F I E D F K H R A P I W K Y D
UniRef90_A5UJF7     Y T G D S L F L V A V L G G H R G E S L D A L R E V I E K V K Y D V E F K K E E
UniRef90_D6F2E3     Q V G E A A L V A A V A A D H R R A A F G T C A H L
UniRef90_D3S5L4     N V G E R I A S I A V F A R H R K E G F E A L E Y I I D E M K K Y
UniRef90_UPI00046E8006 K V G E S S Y F T A I A S K Q R K V A L R L I D E F V E D F K A N A P I W K Y D
UniRef90_K4RLN3     L V G Q S S Y M A G L M G A H R Q K V L E L Y A P F I E D F K A N A P I Y K Y D
UniRef90_W6EJ56     L N H T S S Y I A A V S P K R K V A L S M I N D F V E D F K A N A P I W K Y D
UniRef90_E8QRZ8     L I G Q S S F L C V L M G K N R K N A L E L Y E K F I E D F K R N A P I W K Y D
UniRef90_E6LBG2     K I H Q S S Y L A G V L S K N K L G L K L L N D F V E D F K K S A P I W K Y D
UniRef90_D8EW02     Q V G D E I M A V V V G G D I R D N V F P A L I K T V D R I K K E G S F K K E E
UniRef90_C9RHD3     K V G E R I A S I A V F A K H R G E G F K A L E F I V E E M K K H
UniRef90_UPI0003B7A48C K V G D R V T G F A I F A K H R Y E A F E A L Q F L I D E I K K Y
UniRef90_D3PDD1     E K N D T I L F L A A E A K D R S S A F D A I R D L I E F I K A E T L I K L E E
UniRef90_H1YXY6     N A G D D I T Y I A V F H R V E G F A A V Q N A I D R I K S E L
UniRef90_D5VQM9     K V G E E I V D I T I F S R H R H E A F E A L K L I N E I K K Y
```
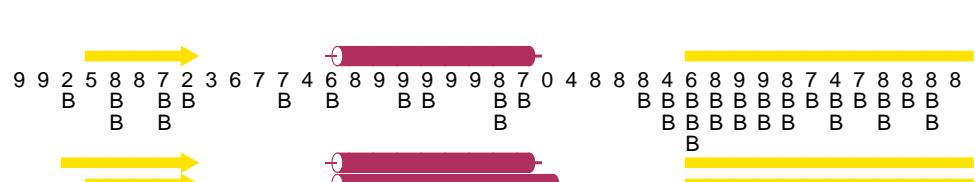
```
                                              130                     140
UniRef90_W5WRP0          D M A D G S V W V G
UniRef90_J9YT24          H Y E E D S K W
UniRef90_S3WWE5          I L S D D S R
UniRef90_UPI00036A89FA   L E S D G T
UniRef90_Q2J6F6          I F A D G A E W V G A C
UniRef90_W4VLA0          Q W E D G E S W M G         D Q L E N K R Y
UniRef90_M1P3M4          L L T D G T Q W V G
UniRef90_M4FR29
UniRef90_W7DAC9
UniRef90_I4BPC5          F F S D G D E W V N S
UniRef90_E3GZP9          E L T D G S E W V G
UniRef90_UPI0003677D81   V Y E D M S A W I E G
UniRef90_UPI0002192F80   R L A D G S T W V G
UniRef90_H0QYW7          T Y A D G S D W
UniRef90_A5G7D2          M F
UniRef90_W9DZ44          H Y Q E D S E W
UniRef90_Q3A7U3          R C G E
UniRef90_E6ZXR3          F Y A A G D
UniRef90_X1MAM4          T Y Q D G S I W V E G K
UniRef90_UPI00036FEBE7   F V A G G
UniRef90_J4G0R6
UniRef90_Q4FML1          H Y K D E S E W
UniRef90_S5ZK45          K R E D G D Y W I
UniRef90_Q0I642          W R N G Q G S W V S G N
UniRef90_F9EIH0          L F A D G A R
UniRef90_D4YL47          H Y D T G G H W V G
UniRef90_D0L5J6          F F D D G S E W V G S
UniRef90_T1A2Y6          H W S N G S D W
UniRef90_UPI00047AB16B   V F D D G S E W V N S
UniRef90_X0QS07          Y Y D D S S K W L S N N
UniRef90_B4CUD7
UniRef90_W2LHJ4          Q Y E D R R T W K E N V E W K N G A A A R
UniRef90_M5TL85          R W G E C E
UniRef90_I5C7M4          V L E D G D V W K V N
UniRef90_UPI0001746BB1   V W
UniRef90_S5TGC6          L L A G P S T W V G
UniRef90_A0A024J501      V Y E D G T V W K G A
UniRef90_UPI00036910D3   T T P A G D S W V
UniRef90_Q749P3          K F V E
UniRef90_I6X4I4          H E E S G
UniRef90_F4S787          Y Y A D G G D W K E N
UniRef90_C1N7M8          T F E G G E V W K E N
UniRef90_D9PVE6          Y T T S G
UniRef90_V4Z740          I
UniRef90_D1JC01
UniRef90_UPI0003B32C85   I L S N G E E W K Q N N N N N E Q V K E E W
UniRef90_UPI0003B5AFA1   Y F S D G S H W
UniRef90_H2GVM7          L M A D G S Q W V G
UniRef90_E7FZA6          L I     G E K R V Y A S Q R S H
UniRef90_A6Q5I2          V   K Q G E R   I Y A R D R S Q K
UniRef90_L0HP15          F
UniRef90_K2RUM9          E G S A G S
UniRef90_F8AJY2
UniRef90_K6VP77          W F G D G D E W V G S
UniRef90_T0M2B8          V R K
UniRef90_UPI00034F8D78   I Y E E S S S W K R N K E C F W A
UniRef90_Q9ZL44          Y L S D N E R   I Y A K K K D H
UniRef90_N1UXN4          R F A D G S E W V G
UniRef90_B9CZN7          V I     G G E R I Y A K E R S Q A
UniRef90_U6EDU7          K G S A G S K
UniRef90_G0SVP6          W Y A K E E
UniRef90_W8KG69          V
UniRef90_Q7M953            L K E G E R   I Y A R A R S H K
UniRef90_UPI000381A41A   Y Y K Q K S E W
UniRef90_W1TRX3          Y F S N G S H W
UniRef90_I0RHZ3          F F A D G D E W V N S
UniRef90_UPI000420AE44   V
UniRef90_G2HZB2          I I N N     Q R V Y A K D R S
UniRef90_D5V6L1          I L D N K R V Y A E D R S T
UniRef90_B6BG97          L R   D G K R
UniRef90_V4Y0R2
UniRef90_A0A053D6Q3      F F E D G D E W V G S
UniRef90_A6Q6G2          V   K N G E R
UniRef90_J0S0Q0
UniRef90_C3XM85          L K N N     Q R I Y A K E R S H H
UniRef90_M3J892          F D T D K V R W G G L R D D N H
UniRef90_UPI00047CBAA5   I L N G K K E Y     A K D R S Q K
UniRef90_UPI000478C7FA     L K N G Q R   I Y A K E R S H R
UniRef90_A5UJF7          I S D N G T K T I L A
UniRef90_D6F2E3
UniRef90_D3S5L4
UniRef90_UPI00046E8006   V   K N G T R   I Y A K N R S
UniRef90_K4RLN3          L R   N G Q R   I Y A K D R S H
UniRef90_W6EJ56          L V D G K R   V Y A K E R S H
UniRef90_E8QRZ8          L V N N E R     I Y A K E R S H
UniRef90_E6LBG2          V
UniRef90_D8EW02          F
UniRef90_C9RHD3
UniRef90_UPI0003B7A48C
UniRef90_D3PDD1
UniRef90_H1YXY6
UniRef90_D5VQM9
```

Multiple sequence alignment (residue positions 1–40)

Label	Sequence
UniRef90_UPI000470B571	D M I D K I K S H H S F D R V G M I L F H C G I V R S V
UniRef90_A1AQF8	T Q Q T F D H L E L Y R A F L E R D A T G T V V L H H G R V K F S
UniRef90_UPI00046751FA	G A M I P F I G I V R I D
UniRef90_F0S3P0	L L E E I K K N S N P E N L G M V L V H N G I V R E I
UniRef90_J1F9R8	K I V D G A V P V A E T L S E W Y E K N S F G A F I P F V G T I R I S
UniRef90_T1B0W0	E P I D P S S L R G A L A D P A C G G Y A S F E G W V R V Q
UniRef90_A6UU63	N G K M G C F V S L S G F V R D Y
UniRef90_X1SAP1	Q P S F I A D S I A K H N T K T D I G A H A I F L G Q V R V K
UniRef90_E3GX81	E K Y G C L I Y Y D G I V R V K
UniRef90_E8T6R1	S V D E L L S R V K A R E N L G M V L V H N G V V R A T
UniRef90_I7LBS4	V T A D P L E P L A A P A R E V R T D H A G A V V T F E G V V R V R
UniRef90_UPI0003B337E7	D I S K K I E E M K Q D P D V G M I L V H N G I V R G S
UniRef90_Q2LUU0	E L S D M I K K A K S H P E V G M I L C H N G V V R G T
UniRef90_B6WTM3	D V N K V L Q E L K A R P H V G M M L V H N G V V R G W
UniRef90_UPI0003B5D171	L D S L I S D I I E K N Q G G M I L T H T G V V R A F
UniRef90_Q1K1U1	D I S K T I A E M K N D P N V G M I L V H N G I V R D R
UniRef90_I0IEF4	V V L F E G V V R L R
UniRef90_UPI0003B64660	S M L E Q V K A H P D F S K A G M V L C H N G V V R E N
UniRef90_UPI00046D6DF2	F D L S E E L K K L K E S D N L G M I L I H N G V V R A T
UniRef90_F8C4C1	K G K F G C I L E F N G F V R V P
UniRef90_G4QSV4	I T E E A I E P L A A Q A R I V R T N A M G A V V S F D G I V R V D
UniRef90_M4ZKE2	K L I Q G A L D T D K L L K A Y Q E E A N F G V F C V F V G I V R I Q
UniRef90_X1AN33	E I I K K N Q D F K K V G M I L C H N G V V R G Y
UniRef90_K0N4J5	E Q I K Q H P D Y H K A G M I L C H N G V V R G T
UniRef90_L0RE02	D I S K K I A E L K Q D P E V G M L I H N G I V R V S
UniRef90_X1UY59	V E
UniRef90_F2LTN9	I K K Q A S A D N L G M I L V H N G V V R A T
UniRef90_UPI00035DB9F1	D L P A M I N Q M K N H P D A G M V L Y H N G M V R D S
UniRef90_A9A058	D L A K M V N R V K R H P D A G M V L C H N G V V R E T
UniRef90_UPI0003B7B74F	N L T E A L A E L K K E P N V G M I L I H N G V V R G W
UniRef90_B8J1J8	D I N K T L Q E L K S R P H V G M M L V H N G V V R D H
UniRef90_Q6AJ76	N I S A K I A E L K K R P D V G M I L A H N G V V R K W
UniRef90_K1YTU2	D I T Q K I Q E L K N R P D V G M I L V H N G V V R G W
UniRef90_A1VC80	L T L A E L K K K P G F A D N V G M V L H N G V V R G W
UniRef90_M1WS40	D I N K A I A D L K K E P N V G M M L V H N G V V R G W
UniRef90_T0ZMH1	F V S D P S C G G I T L F V G R V R V N
UniRef90_S7UR70	D I S K T I A E L K K D P E V G M V L V H N G V V R A W
UniRef90_S0G7T9	D S P V T L A Q M V A D I K A H P E A G M I L A H N G V V R E T
UniRef90_F3Z0K3	D I S K T I A E L K K D P N V G M V L V H N G V V R A W
UniRef90_E1YHV8	S L V D T I K K H P D Y D K V G M I L C H N G V V R G T
UniRef90_UPI000464F6AB	D I S K T I A S L K A E P K V G M V L V H N G A R A T
UniRef90_UPI00036BE30F	S E L L A R I S S E P L D P A V V D A A V A G A E H G A V V F T G V V R V T
UniRef90_C8WK37	Q Q E P S I D Q W L A E A K Q D P Q C G M Y L T H N G I V R I T
UniRef90_T2GCK0	D I T K T I E A L K A A D N V G M I L V H N G V V R G W
UniRef90_D6SLX5	D I S K A I A E L K K T E N V G M V L V H N G V V R A W
UniRef90_J5VS68	A E A K A D P S A A Q C G M Y L T H N G V V R V T
UniRef90_J7J1B3	S I D E W L K E A K K N P A A G M F L V H N G V V R V R
UniRef90_V7I8Q8	R A S Q V G M F L V H N G V V R E T
UniRef90_E4RNT2	L L K E A K A D P D A S E V G M F L V H N G V V R V M

Secondary structure / prediction tracks:

lupas_21
lupas_14
lupas_28
jnet
conf: 9 9 2 5 8 8 7 2 3 6 7 7 4 6 8 9 9 9 9 9 8 7 0 4 8 8 8 4 6 8 9 9 8 7 4 7 8 8 8 8
sol25: 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
sol0: B
jhmm
jpssm

```
                              50              60              70          80
UniRef90_UPI000470B571  S R D G K G V E E L D R N R L N E I L E E M K K S A G I V E I I A E I R E G T L
UniRef90_A1AQF8         S V E L K S L V A D V N E R L A A I A R L A E E Q F N L N Q V L V V H R L G T I
UniRef90_UPI00046751FA  G L S F D L Y L P M L N Q W F K K W T N L E D A K     I M M A H S F G D V
UniRef90_F0S3P0         S R T G K I K E M D E E K L K K V V S E F E K K K G I E A I K V W I N K G R L
UniRef90_J1F9R8         G L S F D I Y E P I L E K W F D N W Q K K A N E R   G A I L K M I H S K G D V
UniRef90_T1B0W0         R L E Y E A F E A L A I K E G E R I I A E A I E R F G I A R A A C V H R L G K L
UniRef90_A6UU63         H F K K T P A E S M D L S I I E E I R Q K A I E K F G L L D A I V Y H N K G I L
UniRef90_X1SAP1         G I D Y S A Y H E M A E N I L A E I R E Q I F S Q Y P V I C M H I Y H S L G M V
UniRef90_E3GX81         E L I V E T N E K S E E L L I K A I   E E I E E K Y N V E I N A I L H V G K L
UniRef90_E8T6R1         S R N G S T V R G M K L S V L R E L I K E T E S R S G I E A V E I W I N E G E L
UniRef90_I7LBS4         R L D Y E A H P A A E E E L A A A C R R V L A K N P G V R A W V G H R T G A L
UniRef90_UPI0003B337E7  S R K L E V Y P D Y D   K I E E I R K E I L E M E G I Y N I A I E A K S G V M
UniRef90_Q2LUU0         S R D G K P V S E L T V K A L D E I V A E M K S R P G I L E V L V E V R E G L L
UniRef90_B6WTM3         S R K   D H A P S H D Q A K M D A I C H E M E Q R P G I F A I V A Q A N E G D L
UniRef90_UPI0003B5D171  T R K G E K T K G V N K E K L E Q I I E N A K C L P G I S D V R V V I R Q G E L
UniRef90_Q1K1U1         T A V C K M M V S S D L G K I E Q I R Q D I E A M D G I Y K V A F E A R S G V M
UniRef90_I0IEF4         C L R Y E A Y E P M T T A E L Q R L G G A V V G E F G L Q A L G V W H S V G E V
UniRef90_UPI0003B64660  T R E G D P V T G L T I Q V L S R I V Q E Q K S R P G I V E I L V H I E E D L L
UniRef90_UPI00046D6DF2  S K D G K P V K G M N L T F N R Q K L D K L D R L Q I E G V V I W I N E G R L
UniRef90_F8C4C1         A K G L D I K E L V I E K L K E I R E E A I K N F D L I E T I I Y H A T G F L
UniRef90_G4QSV4         N L T Y S A H P T   S D S V L K D V V A Q T S T Q H P D A R V W A A H R V G Q L
UniRef90_M4ZKE2         G L S F D I H E V L L K T W F E K W   H H K A K D L G V V L K M V H S L G D V
UniRef90_X1AN33         S K D G K K V K G L K V K L D K V N R I K K V L D K I I D V L V N I R E G E L
UniRef90_K0N4J5         S R E G D E V T G L E L T V L D Q I L S E Q K K R P G I I E I L V H I N E G S L
UniRef90_L0RE02         G I E I K A D H E       K I E E L R Q E H E Q F S G I Y K I V V H A N E G T F
UniRef90_X1UY59         G V E F D A D E A A I G K   I K E L E G K A L K D F D V E D V A I I H R V G R L
UniRef90_F2LTN9         S A N G D K I I D Y D D S E L K T V I N E F E K L S K S V E K V W V W I N R G M L
UniRef90_UPI00035DB9F1  S R D G R P V T G V D Q E K L N E I L D Q T R A M P G I V E V L V H I N D A P L
UniRef90_A9A058         A A D G K T R P T V D H E K L A R V I E K H R R M P G I I E V A V E I A E G R L
UniRef90_UPI0003B7B74F  S R K D K N T V T A V E V K I K A L C A E F E K R P G I W R A T A K A S E G R L
UniRef90_B8J1J8         S T V A S V H I T P D R E K M A A I V H E M E Q R P G I F A I V A D A E E G L L
UniRef90_Q6AJ76         S R A Q E G K I N V L E N K I E A L R Q E Y L K H E G I Y E I L V E S H S G K F
UniRef90_K1YTU2         S R N G K A N V E A L E V K I A A L R E E Y L Q H V G I F E I I I E A Q Q G I L
UniRef90_A1VC80         S R K   D H A P T P D R A R M D A I C R E L E A R P G I F C L L A E A V E G E C
UniRef90_M1WS40         S R E V T A I E T Q D Y E K I E E I R K E I E A Y D G I F R A V A H A K S G T M
UniRef90_T0ZMH1         A V L Y D M F E P L T L K V L E V A A H E A Q V Q W G P A R I F V A H A R G H L
UniRef90_S7UR70         H E T V E A V D I H V D R T V E A I R R D I E A K P G I W R A V A E A N D G L L
UniRef90_S0G7T9         A R D G R A V T G L E I E V L E Q I L T K E R A R P G I L D I Q V H I R E N L L
UniRef90_F3Z0K3         S R K S S I A I R V D R E R L E Q L R Q E Y E R K P G I F R V V V E A H E G D L
UniRef90_E1YHV8         S R D G R K V S G V D H A K L K K I I D E S K N K P G I V E V L V K I F E D K L
UniRef90_UPI000464F6AB  S R N G A P V A S L E V K V V E S I R Q E G Q A M P G M F R V L V K A R A G V F
UniRef90_UPI00036BE30F  A L Q Y Q A H P D A   E A F L R R C C E D V A A T S G L   P V A A V H R V G D
UniRef90_C8WK37         R E G V E G L G E V A Q V E F S E A A V Q E A L T W P G V Y V R T W L N E G V L
UniRef90_T2GCK0         S R K A V V D I A A D R E R M E L L R Q E I E Q R P G I F R V I V E C H D G A L
UniRef90_D6SLX5         S R K D R S L V K K I E V T V E A I R Q R Y E K S Q G I F R I V V Q A N S G I L
UniRef90_J5VS68         L G E V S Q V D F S Y D A A G V D A A V A E V L T W P G V Y V R V W L N E G V L
UniRef90_J7J1B3         G M E F D   Y D A A     K V D A A I A E T Y K M D   G I F Q V R V W L N Q G M L
UniRef90_V7I8Q8         G E E G T A P V T G M V F S Y D E I I E E T Y K L L K G V Y Y V R T W L N E G Q L
UniRef90_E4RNT2         G M E F D   Y D P L     K V E E A I A E T Y K M D   G I F Y V K T W L N K G Q L
```

```
lupas_21
lupas_14
lupas_28
jnet
conf    9 9 8 7 2 6 8 0 6 8 9 9 9 9 9 9 9 9 9 9 9 9 8 7 1 4 8 8 2 7 8 8 8 7 5 1 1 2 0 2
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
sol0                                B
jhmm
jpssm
```

```
lupas_21
lupas_14
lupas_28
jnet
conf      3 6 7 5 1 3 4 1 2 3 4 2 2 6 7 1 7 9 9 9 9 9 9 9 9 9 9 9 9 9 8 6 1   4 6 1 3 3 4 4
sol25         B   B B B B B B B B B B   B B 1 7       9 9     9 9     9 9 9     9 9     1   B B B
sol5                    B B B B B B B B B                 B B     B B     B B     B         B       B B
sol0      B           B B                           B     B B     B               B
jhmm
jpssm
```

```
                                              130                    140

UniRef90_UPI000470B571    T Y
UniRef90_A1AQF8           M
UniRef90_UPI00046751FA
UniRef90_F0S3P0
UniRef90_J1F9R8           L I G G K R I Y A E E R S T
UniRef90_T1B0W0
UniRef90_A6UU63
UniRef90_X1SAP1
UniRef90_E3GX81           I Y K
UniRef90_E8T6R1
UniRef90_I7LBS4           L L S D G S Q W V G
UniRef90_UPI0003B337E7    H I E
UniRef90_Q2LUU0
UniRef90_B6WTM3           H G P E
UniRef90_UPI0003B5D171
UniRef90_Q1K1U1           Y F E E G S V
UniRef90_I0IEF4
UniRef90_UPI0003B64660    F F K E
UniRef90_UPI00046D6DF2
UniRef90_F8C4C1
UniRef90_G4QSV4
UniRef90_M4ZKE2
UniRef90_X1AN33
UniRef90_K0N4J5
UniRef90_L0RE02           I F A
UniRef90_X1UY59           Y Y
UniRef90_F2LTN9
UniRef90_UPI00035DB9F1    V F A
UniRef90_A9A058
UniRef90_UPI0003B7B74F    I F A
UniRef90_B8J1J8           N F E
UniRef90_Q6AJ76           I F E
UniRef90_K1YTU2           I
UniRef90_A1VC80           C T A
UniRef90_M1WS40           I F A
UniRef90_T0ZMH1
UniRef90_S7UR70           H
UniRef90_S0G7T9           F F
UniRef90_F3Z0K3
UniRef90_E1YHV8           Y F
UniRef90_UPI000464F6AB    V
UniRef90_UPI00036BE30F
UniRef90_C8WK37           I Y A
UniRef90_T2GCK0
UniRef90_D6SLX5           M
UniRef90_J5VS68           I Y A
UniRef90_J7J1B3
UniRef90_V7I8Q8
UniRef90_E4RNT2


lupas_21
lupas_14
lupas_28
jnet
conf       3 0 7 8 7 1 4 5 3 4 6 3 2 0 3 8 8 8 7 2 7 9
sol25        B           B     B       B       B
sol5                     B
sol0
jhmm
jpssm
```