```
                              1         10            20            30            40
QUERY                   A Y F Q G M V D V A F V C L G N I C R S P M A E A I M R Q R L K D R N I H D I K
UniRef90_UPI000367068F          M K R V L F V C L G N I C R S P M A E A V F R D L L K K R G L E D I E
UniRef90_A4IKB9                 M V K V L F V C L G N I C R S P M A E A I F R H L V K E R G L D R I A
UniRef90_E6TYI3                 M I K V L F V C L G N I C R S P M A E A I F R K K I K E A G L D D I S
UniRef90_UPI0003B755AE            M R I L F V C T G N I C R S P T A E G V L R Q K L G K R G L D H V L
UniRef90_UPI000373757C          M I I V L F V C L G N I C R S P M A E A I M R D L V E K E G L E K I S
UniRef90_K4ZIG2             S T K V K V L F V C L G N I C R S P M A E A V F R D Q V K Q A G L E H I Q
UniRef90_I4X5V7                 M I Q V L F V C L G N I C R S P M A E A V L R E Q L F Q E G L E K V A
UniRef90_G4HFS1                 M V S V L F V C L G N I C R S P M A E A V L R H K I A A K G L D K V K
UniRef90_G4F3D7                 M K V L F V C L G N I C R S P T A E G V F R R A L E Q A G L D D V E
UniRef90_UPI0002EF1F1D          M I R V L F V C L G N I C R S P M A E A V F R D L V K K K N L Q H I E
UniRef90_W7AXQ5                 M I K V V F V C L G N I C R S P M A E G L F K K L V Q E K G L S D I T
UniRef90_UPI0003FB4380          M V R V L F V C L G N I C R S P M A E A V F R D L V K R E Q L D V I E
UniRef90_F7SJV9                 M K R V L F V C L G N I C R S P T A E G V F W H A V E E A G L N R I N
UniRef90_X4ZZV8                 M L N V L F V C L G N I C R S P M A E A V L R D K I A K E G L E Q I S
UniRef90_UPI0003F997B2          M I Q V L F V C L G N I C R S P M A E A V F R H L V T E K G L D Q F M
UniRef90_Q2BNP1                 M I K V L F V C L G N I C R S P T A D G V F R Q V V E Q R G L E Q I K
UniRef90_UPI0003829D7F      M S N K V S V L F V C L G N I C R S P T A H G V F R H L V I Q A G L E D I E
UniRef90_R2Y3S7                 M K K I L F V C M G N I C R S P M A E A I F R D A L Q K E G N G T F E
UniRef90_E8RKH3                 M T S V L F V C L G N I C R S P L A E G L L R H H V E Q A G L S R F L
UniRef90_A0A011PPL1             M I K V L F V C M G N I C R S P T A E G V F R H F L R E K N L D R V E
UniRef90_K8FBM2                 M V T V L F V C L G N I C R S P M A E A I F R Q K V Q Q A G L E S I Q
UniRef90_F8I3A1                   I R V V F V C L G N I C R S P M A E A V F R H L V H Q H R L D D I V
UniRef90_H8YY13            Q S P V R V L F V C M G N I C R S P T A Q G V F R Q L V E Q A G L D R I E
UniRef90_UPI0004789C1E          M I N V L F V C L G N I C R S P M A E A I F R D L V Q K E G L E K I A
UniRef90_I5BQG4            M N A K L R I L F V C L G N I C R S P L A E G V F R S V V A E R G R D D F M
UniRef90_D5WTL0                 M I R V L F V C L G N I C R S P M A E A V F R R Q V E E E G L S G I S
UniRef90_V4NXD6                 M R S V L F V C L G N I C R S P L A E G L F R H H V E T A G L D R F T
UniRef90_L1LTF2                   M R V L F V C L G N I C R S P T A E G V L R H Q L A E A G L E V I H
UniRef90_B0KF44                   M R V L F V C L G N I C R S P T A E G V L R H Q L Q A A G L D K V Q
UniRef90_A5GVR2            M S S Q P T R V L F V C L G N I C R S P A A E G V F L D L L E R E N L D A F E
UniRef90_H0K902                   T S I V F V C S G N I C R S P M A E I V F R R L A E H G L D A V T
UniRef90_C5BL27            K K V K V L F V C L G N I C R S P T A E G V F R K K V S D A G L E E I E
UniRef90_G4T056            K K I K V L F V C M G N I C R S P T A E G V F T K L I E E E G L H L F E
UniRef90_W7CTG7                   V R V L F V C L G N I C R S P M A E G M F R A K V D A A G L D Q I R
UniRef90_M5F2P3            M S A K P S I L F V C L G N I C R S P L A E G V L R A V L A E R G L D V L
UniRef90_C7NDX4                 M V K V L F V C L G N I C R S P M A E A V F R D M V K K K G L D K I I
UniRef90_S1QZ61                 M T K V L M V C L G N I C R S P M A E G L M R D Y L A K N H R S D I E
UniRef90_A0A023WQY3             M K V L F V C M G N I C R S P T A E G V F R Q R V E Q A G L S R I E
UniRef90_UPI0003B452C1          M K V L F V C L G N I C R S P T A E G V F R R Y V E Q A G L D K I S
UniRef90_UPI000409B79F          M R S I L F V C L G N I C R S P T A E G L M N H L A A A G L S H S V R
UniRef90_F5J1M9                   Y K I L F V C L G N I C R S P A A E G I L K R M V R E Q G L D D I S
UniRef90_UPI0003B7421F          M I R V L F V C M G N I C R S P L A E G V F Q R L L E I H D L D Q V L
UniRef90_W5YF50           M S K Q V S V L F V C L G N I C R S P S A E G V F R S L V E K S G L E D I K
UniRef90_T2BD04                 M K K I V F V C L G N I C R S P M A E F V M K D L V K K A N L E K F F
UniRef90_F4HEN9                   R V L F V C L G N I C R S P M A E F I F K H K L Q Q A G L S W V N
UniRef90_A8LI12           M S M T V S V L F V C L G N I C R S P T A E G V F R H L A E A A G A D V I
UniRef90_J1IJD5                 M Q V L F V C L G N I C R S P T A E G V L R H K L R E A G L D Q V E
UniRef90_UPI00041AB5AB         T K V L M V C L G N I C R S P L A E G L L K E K V D L D N I Y
UniRef90_R2SEK4                 M K S I L F V C M G N I C R S P M A E A I F R D Q F N Q R E E K F H
UniRef90_UPI0003B3BE98    M D R P V R V L F V C L G N I C R S P M A E G I F R K L L K E R G L E G F E
UniRef90_N6WQB7           M R D P V K V L F V C M G N I C R S P T A H A V F Q K R L E E Q G L G R V V
UniRef90_A0NZR4                   V L F V C L G N I C R S P L A E G V F R S I V S E A G L D R F E
UniRef90_A0A023X4M4               V R V L F V C M G N I C R S P V A E G V F R K L V E E A G L G R I R
UniRef90_UPI0003695078           I R V L M V C M G N I C R S P T A E G V F R A H V E A A G L D I I D
UniRef90_UPI00047BD84D        P P K V L F I C L G N I C R S P T A E G V F R A R A K S A G L D V I
UniRef90_UPI0002D67100          M R V L F V C L G N I C R S P T A E G V L R Q K L R D A G L E R I E
UniRef90_UPI0003664EFE    K A H K I I K V L F V C M G N I C R S P T A H G I F R Q L V E K E L D Y F E
UniRef90_A0A011PVQ2             M I K V L F V C M G N I C R S P T A E G V V R Q M L R R K E L D R V E
UniRef90_S0ETV5                 M I R V L F V C L G N I C R S P M A E A L F V Q K V Q R A G L H K I E
UniRef90_U3AXP0                 M R V L F V C M G N I C R S P T A E G V L R Q R L S A A G L G K V T
UniRef90_D3PLX3                 M T R V L F V C M G N I C R S P M A E G I F R R K L R E R G L E Q F E
UniRef90_I2GTI9                 M L S V L F V C Y G N I C R S P V A E G V F R A L V A E Q G L E V I Q
UniRef90_R6KMB6                 M I R V L F V C H G N I C R S P M A E F V F K D M I N K K Q L S D F Y
UniRef90_J2G442           M S Q A P S V L F V C L G N I C R S P L A E A A L R R E A E A V G L D V V
UniRef90_UPI000465DCEF          V N V L F V C L G N I C R S P T A H G I F E E K V R Q A G L A R I Q
UniRef90_Q0A8Q7                   R V L F V C M G N I C R S P T A E G V F R R L L Q E R G L E G I Y
UniRef90_B6IVE4                   V L F V C T G N I C R S P T A E G L F R Q A V A R A G L D R V R
UniRef90_R7J718           K K Y K I L F V C L G N I C R S P S A E A V M K K K D A G I D R F L
UniRef90_UPI00047B1F63         Y S V L F V C L G N I C R S P M A E A V F K D L V L R E G L D R I A
UniRef90_R8W438                 M K I L F V C H G N I C R S P M A E F V M R D L A E K A G L D Q I Q
UniRef90_L9P9N3            A K T S V L F V C M G N I C R S P T A E G V F R H R V E A A G L D Q F R
UniRef90_M1FKC8           M A A S V S V L F V C L G N I C R S P T A E G V F R K Q V A A A G L E Q V R
UniRef90_Q8U528                 M K H I L F V C M G N I C R S P L A E G V L T D L A D G E G V D R I T
UniRef90_V6Q4X9                 K K V L I V C L G N I C R S P M A E A M L R H R I E E R G L D K I E
UniRef90_A1K5X4                 M K R V L F V C T G N I C R S P T A E G V A L H M I H S G G L G H V H
UniRef90_E6J9V4                   V R V V F V C T G N I C R S P M A E V M A R H E F D E A G L D R V R
UniRef90_R7A159                 M I K V M F V C L G N I C R S P M A E F V F K D L V K K Q G L E K F Y
UniRef90_UPI00037A7A31          P I K I L M V C L G N I C R S P L A E G I L Q S K L P A     G K F M
UniRef90_R9IMB8                 M I K I L F V C H G N I C R S P M A E F V M K D M V E K Q G I A N F Y
UniRef90_R6Z5Z4           G K I K I L F V C H G N I C R S P M C E F I F R D K V Q K L G L E Q F H
UniRef90_F8I0I4                 M K N V L F V C L G N I A R S T M A E A L F T Q M V A E G L E D I K
UniRef90_L0B6F5                 M N N V L F V C T G N I C R S P T A E G L F R Q M L L E K K I A E F N
UniRef90_K7AFM3           M A T N T P S V L F V C L G N I C R S P S A E A V F K T K A A D I G L   V I E
UniRef90_UPI00046DFE6E          P F S V L F V C L G N I C R S P A A E G V F R D L V K K R G L D S F K
UniRef90_F9TCK0                 M K K L L V V C M G N I C R S P T G E A I L R S K S Q Q L G I P   V E
UniRef90_H8WCM6                   V S V L F V C L G N I C R S P A A E G V F R H L A R E Q G L G R L H
UniRef90_R7JJF5            M S D K Y K I L F V C L G N I C R S P A A E G V F R Q M V E K R G L E K L E
UniRef90_B5H5Y5           M N S P Y R V C F V C T G N I C R S P M A E A V F R T F V E D A G L G A V R
UniRef90_K0NTR8                   T K I L F V C H G N I C R S P M A E A I I M K Q L V A E G L D D S K
UniRef90_R6HHX0                 M K K I L F V C H G N I C R S P M A E F V M K D L L A E K G L S Q F H
UniRef90_W8L4J9                 M G V L F V C L G N I C R S P T A Q G V F E H L L A E Q G L D R I H
```

```
                              50             60             70          80
QUERY                    V H S R G T G S W N L G E P P H E G T Q K I L N K H N I P F D G M I S E L F E A
UniRef90_UPI000367068F   V D S A G T S S W H V G E P P H Y G T S N K L K E Y N I S T E G I T A R Q K D D
UniRef90_A4IKB9          V D S A G T G S W H V G E P P H E G T R R I L N E N D I D Y S G I A R Q R R D
UniRef90_E6TYI3          V D S A G T G D W H I G K R P H E G T L E I L E T N S I D H Q G M A A R Q V T K
UniRef90_UPI0003B755AE   V D S A G T H G Y H V G E S P D P R A R D K A A Q R G Y S L D D Q T A R R I E D
UniRef90_UPI000373757C   V D S A G T G S W H I G E P P H Q G T L K K L A E Y N I S T K G L I A R Q F K D
UniRef90_K4ZIG2          V D S A G T G D W H I G E P P H E G T R K L L D K H G I T Y E G M I A R Q P T D
UniRef90_I4X5V7          V D S A G T G N W H I G K N P H P L K I L N D Y D I S S D G L T G R Q R S D
UniRef90_G4HFS1          V D S A G T G D W H V G K I P H E G T R K L L D S W N I S Y E G M T A R Q V M D
UniRef90_G4F3D7          I D S C G V G S W H V G K A P D S R A Q Q A A L C R G I D L S G L R A R Q V Q D
UniRef90_UPI0002EF1F1D   I D S A G T G N Y H I G K S P H E G T L H I L K Q N S I S S E G M A R Q V K E
UniRef90_W7AXQ5          V D S A A T G S W N L G N P P H R G T K Q V L K K H Q V D T D G M R A R K I D Q
UniRef90_UPI0003FB4380   V D S A G T G H W H E G N T P H A G T R E K L E S E N I S W D G I L A R Q V R E
UniRef90_F7SJV9          V D S C G V G N W H V G K A P D T R A Q S A A L Q R G I D I S H L R A R Q A N D
UniRef90_X4ZZV8          V D S A G T G D W H I G K P P H E G T R R M L D Q Y G I S Y K G M A A R R V S G
UniRef90_UPI0003F997B2   I D S A G T G D W H L G H P P H K G T Q G L L G E K G I T C E G M K A R K E N D
UniRef90_Q2BNP1          V D S A G T A A Y H V G N P P D H R S T L A A K K R G Y D L S L L R A R Q V E D
UniRef90_UPI0003829D7F   I D S A G T A A F H I G K S P D G R S T T V A L E R G I D M T D L R A R K V D F
UniRef90_R2Y3S7          V D S A A T S R W E V G N P P H H G T Q Q L L A E H S I S T K G M R A R Q T N D
UniRef90_E8RKH3          I D S A G T G G W H A G E G P D R R S V A V A A R Y G V D I S S Q C A R Q L H R
UniRef90_A0A011PPL1      V D S A G T H G Y H A G E A P D Q R T Q R A A A V R G Y D L S E M R A R K V A S
UniRef90_K8FBM2          V F S A A T S H W E V G S Q P H K G T R K I L E Q Q G I S Y Q G M R A T Q I Q P
UniRef90_F8I3A1          V D S A G T A H H V G E P P H P L R E L T V H G I G T D N L V A R Q R R D
UniRef90_H8YY13          I D S A G T H A Y H V G E P P D A R A A Q T A R L R G I D L S D L R A R R A R D
UniRef90_UPI0004789C1E   A D S A G I G N W H T G K P P H E G T R A I L D E R A I S Y Q G I T A R Q V R P
UniRef90_I5BQG4          I D S A G T G A W H V G N A P D P R S I E I A R R F G V D I S M Q R A R Q V N D
UniRef90_D5WTL0          V D S A G L G T W N V G D P P H P G T R R V L E A H G I P W E G H R A R K V S R
UniRef90_V4NXD6          I D S A G T G N W H K G E P P D R R S I A V A A R Y G V A I H E Q C A R Q L H D
UniRef90_L1LTF2          V A S A G T G D W H V G N P P D S R T R R A A Q L R G Y D L S A Q R A Q Q V E D
UniRef90_B0KF44          V A S A G T G D W H V G K A P D S R T C K A A L A R G Y D L S Q Q R A Q Q V R H
UniRef90_A5GVR2          V D S A G T G N W H V G K R A D P R M R A A A E R R G I D L P S R A R Q I E P E
UniRef90_H0K902          V R S A G T G G W H V G E P A D P R A R E T L A A H G Y P V E H T A R Q V G P E
UniRef90_C5BL27          I D S A G T S G W H I G E P P D Q R A V A A A K A R G Y D L A P L R G R Q L V A
UniRef90_G4T056          I D S A G T H A Y H V G E Q P D L R A Q K A A R E R G I E L Q H L Q A R K V I Y
UniRef90_W7CTG7          I D S A A T G N W N L G N P P H R G T Q Q V L T K H G I D H T Q M R A R L I D Q
UniRef90_M5F2P3          L D S A A T S G W E V G S A P D P R S I A I A A R H G I D I S G A L K A R V T D
UniRef90_C7NDX4          I D S A A T S S W E H G N P V H H G T K T R L A K E G I S V K G M Y S R L N N D
UniRef90_S1QZ61          V A S A A T S T W E H G N P V H P G T K K V L T H L G I D T S A M F S T P I T T
UniRef90_A0A023WQY3      I D S A G T G G W H V G K A P D A R A C E A A G R R G Y P L A A L R A R Q V Q P
UniRef90_UPI0003B452C1   I D S A G T S D W H I D K T P D P R T Q A A A A K A R G Y D L S T L R G R Q V E D
UniRef90_UPI000409B79F   I D S A G T G T G D P P D P R A I A A A R K R G V D L A P L R A R Q V R D
UniRef90_F5J1M9          V D S A G T S G Y H D G D L P D H R M R Q H G A R R G Y K F D S L S R R F T S D
UniRef90_UPI0003B7421F   I D S A G T H A Y H V G K S P D S R A V Q T A F A R G I D L S R L R A R Q V D D
UniRef90_W5YF50          I D S C G T G D W H I G K A P D S R A T Q A A R K R G I D I S N L R A R Q F V A
UniRef90_T2BD04          I T S A G T S G E H D G E N M H Y G T Q N K L K S L N I K Y Q N F T S K K L T Q
UniRef90_F4HEN9          V D S A G T A V W H S G E G M H C G T A D M L E L H N I A S N G F R S R Q I R K
UniRef90_A8LI12          C D S A G T S N W H V G G P P D R R A V A E A R G R G I D L S G L R A R Q T A D
UniRef90_J1IJD5          V A S A G T G D W H V G N P P D K R S Q R A A L Q R G Y D L S A Q R A Q Q R A D
UniRef90_UPI00041AB5AB   V D S A G T A N Y H I G K Q P D P R S I A V A K H G I D L S G Q R C R Q F T D
UniRef90_R2SEK4          V D S A A T S R W E V G N P P H R G T Q K I L N A H N I S T K G M Y A R Q V T S
UniRef90_UPI0003B3BE98   V D S A G I G A W H A G E P M D P R A R R V L E E E G A Y F P H V A R R L T R E
UniRef90_N6WQB7          V D S C G T G S W H I G K Q P D P R A M E A G L R R G Y D L S S L R A R Q I Q Q
UniRef90_A0NZR4          I D S A G T G A W H V G N P P D P R S I E I A A Q H R I D I S S Q R A R Q V S D
UniRef90_A0A023X4M4      V D S A G T G A W H L G H E P D E R A Q R S V L S R G I D I S D V R A R V S E D
UniRef90_UPI0003695078   V D S A G T H G F H I G R A P D R R A Q E A A T A R G I D I S G L R A R Q V Y D
UniRef90_UPI00047BD84D   I D S A G T S G W H I G E P P D H R S I E A G E M R G Y S F A G Q A S R K V I R
UniRef90_UPI0002D67100   V A S A G T G G W H A G E P A D V R S Q R A A K E R G Y D L S A Q R A Q Q V G D
UniRef90_UPI0003664EFE   I E S A G T H S W H K G Q G A D P R S V E A A R Y F D C D I S D L R S R Q Q N D
UniRef90_A0A011PVQ2      V D S A G T H G Y H V G E A P D Q R T Q R A A A C R H Y D L S D M R A R K V Q D
UniRef90_S0ETV5          A D S A G T G G W F I G E P L H P G T Q A L L Q Q H G I A Y E H R A R L L E A S
UniRef90_U3AXP0          V D S A G T G D W H V G K A P D G R S A Q A A A A R G Y D L S S L R A R Q V Q R
UniRef90_D3PLX3          V D S C G T G D W H A G E P A D P R T Q A V L S K Y D A H F P H V A R Q V R A E
UniRef90_I2GTI9          C D S A G T A S Y H I G E L P D R R T R E N A L E H G L T L T H R A R R I T G E
UniRef90_R6KMB6          I A S A A T S T E E I G N P V Y P P A Q R E L A K H G I S C E G K R A K K S D Y
UniRef90_J2G442          V D S A G T G A W H I G K G P D P R S C D E A Q R H G I D I R A Y R A R Q P S D
UniRef90_UPI000465DCEF   I D S A G T G A W H I G K G P D A R S Q R A A L K R G Y D L S Q L R A R Q V N P
UniRef90_Q0A8Q7          I D S A G T H D Y H I G K A P D P R S Q I R A A A Q R G V D I S D L R A R Q V E D
UniRef90_B6IVE4          I D S A G T H G Y H V G D P P D R R S V A A A K A R G V D L S A L R A R R V E D
UniRef90_R7J718          I D S A G I I G Y H E G E P A D P R M R A H A I R R G Y R L D S I S R P V R T Q
UniRef90_UPI00047B1F63   V D S A G T G D W H V G H P P H E G T R K L L D R N G I S Y A G M A R Q I D G
UniRef90_R8W438          V A S A A T S T E E I G N P V Y P P A R R K L A E H G I G S A G H A A R Q M N R
UniRef90_L9P9N3          I D S A G T H G Y H V G E P P D A R S M E H A A R R G Y D L S A Q R S R K V R D
UniRef90_M1FKC8          I D S C G T G D W H I G K G P D Q R A V T A A G R I G I D I S G L R A R Q F E D
UniRef90_Q8U528          V D S A G T G G W H T G D A P D P R S I A A M R R H G I D L S R Q R A R Q V T R
UniRef90_V6Q4X9          V S S R A T S N W N V G Q A P H A G T R K K L A E Y Q I D D S G I F S E Q I K D
UniRef90_A1K5X4          V D S A G T H G Y H V G E A P D P R T L K A A A R R G Y D L S P L R A R K L R D
UniRef90_E6J9V4          I S S V G T G D W H V G H G M D P R A A S E L A A H G Y D T A H V A A Q L S D D
UniRef90_R7A159          I K S S A T S S E E I G N D I H Y G T R N K L I Q E G I S F E K R E A T K L K T
UniRef90_UPI00037A7A31   V D S A G T G G Q G P D H R S V L A A K N R G L D I S M Q K A R Q I K D
UniRef90_R9IMB8          I A S A A T S M E E I G N P V H H G T R T R L A Q E G I S V A G K Y A I R M E C
UniRef90_R6Z5Z4          I E S A A T S T E E I G N M P H H G T Q Q I L S R L G I S C Y G K R A R Q I R D
UniRef90_F8I0I4          I D S A G T S N E M G N P H P H G T L K E H Q I P F D W I R A R Q I P
UniRef90_L0B6F5          V D S A G T H S Y Y V G R K P D E R A K M E A L L R G Y D I S N H V A R Q N I D
UniRef90_K7AFM3          I D S A G T A G Y H K G A A P D K R S Q A V G M E R G Y S F K G L K C R V Q Q D
UniRef90_UPI00046DFE6E   I D S A G T I D Y H E G N Q A D P R M R A A S K R R G I E I T S L S R P I R P D
UniRef90_F9TCK0          V D S A G T I G Y H Q G N P P D S R A K A A G E H R G Y S F K G I R S R K V V D
UniRef90_H8WCM6          I D S C G T G D W H I G K S P D E R A T A A A R G I D I S D L R A R Q F R D
UniRef90_R7JJF5          A D S A G T Y A G H V G E Q P D S R M R N A A Y A R G Y L L T H R A R Q V R R D
UniRef90_B5H5Y5          V D S A G T G G W H E G D G A D P R T V S V L E A N G Y P S D H F A R Q F R E W
UniRef90_K0NTR8          V I S S E E I I G G I G N L M D P R A E R E L T K Q G V P F T Q R R A Q L T T K
UniRef90_R6HHX0          I E S A A T S R E E I G N P V Y P P A R R K L A E H G I S C N G H A R R Q I R D
UniRef90_W8L4J9          V D S A G T H A Y H V G K P P D D R A R K A A M N R G I D L S G Q R A R R P G D
```

```
                              90            100           110          120
QUERY                T D D F D Y I V A M D Q S N V D N I K S I N P N L K G Q L F K L L E F S N M E E
UniRef90_UPI000367068F F E K F D Y I V G M D E S N I R D I C R I L G Q T E H P K I F R F L D L T S H K
UniRef90_A4IKB9      L E E F D Y I I A M D A A N L N D L R R L A G N S S A V I A R L L D F V P D R E
UniRef90_E6TYI3      E D Q F D Y I I G M D A S N I G N L H K G M N N A G G E I A R L L D F V P G V V
UniRef90_UPI0003B755AE F E R F D W V I A M D R G H L R Q L E R L C P Q A T A E I H L F R D F Q G G S H
UniRef90_UPI000373757C F D E Y D Y I V G M D E S N I R N I S R M T G L P A D P K V I R L L D L T D A K
UniRef90_K4ZIG2      F Q T F T Y I V C M D P N N E R N V L D W N G S D T R T V L R F M S L L P E E N
UniRef90_I4X5V7      F D K F D Y I I G M D R T N I D D I R S M L G Q P D H P K I F R F L D L T D H L
UniRef90_G4HFS1      L E A F D Y V I G M D D S N V A N M R K L P G G G D A S I M K F M D L L P D E K
UniRef90_G4F3D7      F A E F D Y V L G M D Q D N L R A I R D L K P N S Q A H V G L F L D F A G T P G
UniRef90_UPI0002EF1F1D E D N F D Y I I G M D A E N L H R L A R N K T G Y I G R L L D F V P G K V
UniRef90_W7AXQ5      E D Y D Y I I G M D D T N L S D I E D L R D P A S H A V I R K L M D F V P N P E
UniRef90_UPI0003FB4380 E D W F D Y I V P M D S S N V R N L R K L N K D A P I V K L M E Y V P N P K E
UniRef90_F7SJV9      F L D F D Y V L G M D R D N L K A M Q A L Q P N S R A H V G L F L D F A D M P E
UniRef90_X4ZZV8      E D F F E Y I V C M D K S N G A N V R R L P G G E D A K L M Y F M D L L P D D H
UniRef90_UPI0003F997B2 F K Y F S Y I V A M D A Q N K E D L M N L A R N N C I E I S L L S D Y V P A M W
UniRef90_Q2BNP1      F T E F D Y V L A M D H E N L L N L K A I K P N F T G H L G L F L D F A E A S E
UniRef90_UPI0003829D7F G D F Y A Y D Y I M D D A N Y S N L M E L A P E H V D K V Q M F L E Y T Q E F E
UniRef90_R2Y3S7      F Y T A D Y I I G M D R E N V S D L Q T M A P E T N D K I Y L Y L D R V S G Y G
UniRef90_E8RKH3      E D F Y R F D L I L D R D N V R N I R K I A P D D T T T I G L Y L E E A L G L I
UniRef90_A0A011PPL1  Q D Y F D Q I L A M D R N N L D V L K R I C P P D M H D R L L M S Y S K S F D D
UniRef90_K8FBM2      F K K Y D Y I I G M D T N N V A D L K A L A P E E Q P R I H L F M E V V A G K E
UniRef90_F8I3A1      L E S A D Y L I A M D R E N Y A A I Q R L G T I K G R L Q L F M D L L P E E G F
UniRef90_H8YY13      F H A F D Y V L A M D G D N F R D L S E L C P G L S N R L K L F M D F A P Q A P
UniRef90_UPI0004789C1E A D W Y Q Y I V A M D E N N M N D L I R E K T E G T K V A R L M D Y V E D A E E
UniRef90_I5BQG4      F E R F D L L L G M D R N N V R T L R E R A P E A A G K I H L F L N Y A D G R T
UniRef90_D5WTL0      S D Q F N Y I V A M D E D N L A G L R R L D P E Y L H K V S L L L D W A P E A E
UniRef90_V4NXD6      F H R F D L I L G L D R D N V R N I R T L M P D A T A T V A L Y L D E A L G I S
UniRef90_L1LTF2      F T R Y D L I L A M D K S N L A N L Q A M R P H A S A E L D L L R R Y E G A L
UniRef90_B0KF44      F A E Y D L V L A M D E S N L R D L R A L R P S A V G E L D L F L R R Y Q G A L
UniRef90_A5GVR2      D L R F D W I I T M D D S N L A N V R A L D P S H D R I V P L T S H C S R H Q A
UniRef90_H0K902      H L D A D L L V A A D K S H L R V L V D D P D R R L L R S F D P T A P A D
UniRef90_C5BL27      D D F R I Y D Y I L V M D R E N L A N S K A P E F S G C L R L L L A F S S Q H Y
UniRef90_G4TO56      F E G Y D Y L L A M D D D N Y S I L L E A C P E V H R D K Y L L D H A P H V G T
UniRef90_W7CTG7      D D F F D Y V I G M D G S N M K D L E A L K P E S D V I L K K L M D F A P D K Q
UniRef90_M5F2P3      F H R F D L I L G M D R S N V R D L R A L A P A A R D R V H L L F E F A D G K A
UniRef90_C7NDX4      D L D A D Y I I G M D E S N I E N I K L F A D G K N K G E I K M L L E Y A G E K
UniRef90_S1QZ61      Q D F Y E Y D Y I M D H Q N V A D L S A R A P Q D C D K V Y L Y L D V V D G Y Q
UniRef90_A0A023WQY3  F E H F D L I L A M D H D N L G R L Q T L R P A R G Q E L D L L L R R Y G L E A
UniRef90_UPI0003B452C1 F T E F D L I L A M D K S N L S N L Q A I Q P D A K A E L A L Y L P R F G I S P
UniRef90_UPI000409B79F F S D F E L I V G M D R Q N V A D L R R L A P G S T T R I G L L E E A L G L S
UniRef90_F5J1M9      F D R F D I I L A M D D S N Y H N I M R L A P D S E K K V Y R M V D F S K R F G
UniRef90_UPI0003B7421F F D E F D L I L V M D E H N Y D T L L F T C A E R H R G K M R Y L D F A P H L E
UniRef90_W5YF50      D D G F D Y V L V M D Q Q N L A D V T D I W R Q S G T R P E L F L G Y G R S H H
UniRef90_T2BD04      C D E S D F L I T M D N S N F K N V Q K N Y K N T Q N K L L K I T D F A S H L G
UniRef90_F4HEN9      Q D N F D Y I I A M D D S N L E D L E R F F G K H P Q Q I F K I T Q L C P D L E
UniRef90_A8LI12      F D R F D L I Y G M D R A N I A K L E A L R P N A T P V A L F L G E A P G I G R
UniRef90_J1IJD5      F S R Y D L I L A M D Q S N L R N L K A M Q P Q G K A D L D L F L R R Y D S V V
UniRef90_UPI00041AB5AB F K H F D Y I L A M D K D N Y N N I M A L A N N S Q Q K V K L I L H H M P P S E
UniRef90_R2SEK4      E D F Y Q S D I G M D R E N V E D L L R L A P G T Q E K I L Y L D L V P G K G
UniRef90_UPI0003B3BE98 D L R Y D H I L V M D R E N L E E V L G R F P E A R G K V R L V L E E L G G
UniRef90_N6WQB7      F D Y V L T M D R D N Q Q I V A N L T S D N A T T R P E L F L R Y A I H H Q E
UniRef90_A0NZR4      F R R F E T I V A M D R D N L A A L K R L G G A G S T G L R L L N T P P
UniRef90_A0A023X4M4  L D R F D Y V L T M D E Y N L R E V R A L G D G K T V V R P F M D Y H P D P E V
UniRef90_UPI0003695078 F E A F D Y I L A M D E A N Y G I L V A D A P S A R E H I H R F L S F A D R P E
UniRef90_UPI00047BD84D F A K F D Y I I A M D L K N A A A L K K I C P E Y I S R I G L F L D Y V P Q A K
UniRef90_UPI0002D67100 F N H Y D L I L A M D K S N F R D L K A L Q P G A K A E L D L L R R Y A A V K
UniRef90_UPI0003664EFE F E Y Y D Y I I A M D N R N L S D M K A I A L N T M R K V S K M L E Y A P T V N
UniRef90_A0A011PVQ2  L D Y F D L I L A M D H N N L S V L Q R I C P E K H D R L G L F M S Y K N F D D
UniRef90_S0ETV5      D R R F D Y I L A M D C S N L T Y I R Q M A P G G E K A R L I M E F A P E L G R
UniRef90_U3AXP0      F Q R F D L I L A M D H D N L A R L Q A L R P A S G G A E L D L L L R R Y D L A
UniRef90_D3PLX3      D L Y F D H I F V M D R E N L R T L E R M F A H R G K A R L L D L N G G
UniRef90_I2GTI9      D A Q F D Y F V A M D E A N F E A I E K L H P D D T I F L L R E F D P A V N D Q
UniRef90_R6KMB6      D K Y D Y L I G M E G V N R R N M L R I L G S D P E H K V S L L L D Y S D R P
UniRef90_J2G442      F H R F D R I L A L D A A N L A D L E R I A P G A P A R L S L L L D H V P G S G
UniRef90_UPI000465DCEF F D E Y H Y I L A M D H S N L Q D L Q A M R P T H Y S H L G L F L E F G D N H Y
UniRef90_Q0A8Q7      F E I F D L I L A M D G A N F A D L R R E C P K P Y R R I R M F L D Y A N H P E
UniRef90_B6IVE4      F H R F D L L L A M D R G H L S H L S R M G P S G R L H L F L D F A P P P L R G
UniRef90_R7J718      D F Y F D L I I G M D N R N I D D L K E K A P D T E Q K I H Q M M E Y S T N G L
UniRef90_UPI00047B1F63 D R F D M I V A M D T R N E R D I R G V L G A S P K S E V I R F L S L M P E G Q
UniRef90_R8W438      Q D Y F D L I G M D S A N I R N M R R I C G G D P D D K I R M L M D Y T G V S
UniRef90_L9P9N3      F E E F D H V L A M D H D N L R L L E A A C P R H N H K L R L F M A H A S R S G
UniRef90_M1FKC8      L D S F D Y V L V M D R Q N L A D V K E I W H Q N G G T V R L F L N F A D F D D
UniRef90_Q8U528      F E A F D L I L A M D E N N L A N L L Q L S P E Y H K L H L F M D Y A A G H P
UniRef90_V6Q4X9      F E T Y D L I G M D K Q N I K D L K R M A P Q T H D K I H L Y L S L D N Q S V
UniRef90_A1K5X4      F Q D F D L L L A M D R G H L D L M K R A C P E V Y R P L D L F L R Y A A K T G
UniRef90_E6J9V4      D H D A D L L V A L D S G H R D H L L R A D V D P D R V R L L R A Y E P G A D G
UniRef90_R7A159      E D Y E K Y D Y I I G M E K A N I I N I Q G R D V D N K V Y R L L D F S N N P
UniRef90_UPI00037A7A31 F I D F D H I F V M D S S N F K D V T R L A P T P E K V I L M M D E I F P G Q K
UniRef90_R9IMB8      S D Y Q K Y D Y I M D N W N Y K N I L R M I G K D K E H K V S L L L D Y T D H P
UniRef90_R6Z5Z4      Y D E Y D Y L I G M D D M N I R N M K R V F G E D K D K K I Y K F L S F A G E E
UniRef90_F8I0I4      F E W A D Y I I T M D Q Q N M K R L A P S A D S A A K I K L A Y P S Q A D
UniRef90_L0B6F5      F L C F D L I A M D F K N I Q Y M K E I C P N E Y F Y K V K L L T N F S N Y Y
UniRef90_K7AFM3      F E K F D Y I L G M D N Q N I A S L L E A C P E L Q H K V T L L L S F S D A E E
UniRef90_UPI00046DFE6E F R D F D L I L A M D N Q N R D D I I E A F E D A H K K V R L M C S Y C K K H D
UniRef90_F9TCK0      F E D F D L I L A A D R D N L A A L I Q Q C P Q H Q H K V K L L F D Y S N S E Y
UniRef90_H8WCM6      L D Q F D Y V L A M D V R E W H Q N G G T E L P R L L F L D Y G D S E L
UniRef90_R7JJF5      F E E F D R I V A M D D T N Y H N L Y R H N I R E A G N R I Y R M S E F F H P N W
UniRef90_B5H5Y5      F G G L D L V V A L D E G H L R A L R S L A P A D K V R L L R A Y D P A R P D D
UniRef90_K0NTR8      E D Y A K Y D Y A M D N L L A L N Q I C G G D P D R K E Y K L L Q F T G S Y
UniRef90_R6HHX0      E D Y A K Y D Y A M D N L R D M Y R I C G G D Y A E K M S L L M D H T A H P
UniRef90_W8L4J9      L Q R F H Y V L A M D R E N L A N I R A L M K S T P M G Q L M M E H A R A W S E
```

```
                              130            140           150
QUERY                   S D V P D P Y Y T N N F E G V Y D M V L S S C D N L I D Y I V K D A N L K G
UniRef90_UPI000367068F  K D V P D P Y Y T G D F Q E T Y D L V V D G C E A L L S K I I E E
UniRef90_A4IKB9         K D D P D P Y Y T G N F V E V Y H L V R S G C E H L L E A I I R D H R L
UniRef90_E6TYI3         A D V P D P Y F T G N F E E V Y E L I E E G C E R L L Q H I R K D
UniRef90_UPI0003B755AE  Q D I P D P Y Y G G G F N E V L D L I E A G C E A M L D Q L Q Q D G
UniRef90_UPI000373757C  K D V P D P Y Y T G D F Q E T Y D L V S E G C K I L L E K I K K E
UniRef90_K4ZIG2         S D E P D P Y Y T G N F E E V Y R L I K T G C E R L L Q R I K N E H Q
UniRef90_I4X5V7         K D V P D P Y F T D D F Q E T Y Q L I D E G C E A L L G K I M E D H K
UniRef90_G4HFS1         R E V P D P Y F T G N F E E V Y R L I D A G C D I L L D K I I Q E K
UniRef90_G4F3D7         T E V P D P Y Y G E G F E N V L N M I E A A S D G L I Q H L K R E
UniRef90_UPI0002EF1F1D  D D V P D P Y Y T G N F E E V Y D L V K E G C A R L L D E I I
UniRef90_W7AXQ5         K N I P D P Y Y T G D F E E T E R L I T A G V K G L L E T I R S E K Q L
UniRef90_UPI0003FB4380  V D V P D P Y M T D N F D Y T Y E L V V E G C H H L L K R I K E D K S L
UniRef90_F7SJV9         A E V P D P Y Y G E G F E H V L N L I E A A S A G L I A Q L R K D G
UniRef90_X4ZZV8         K E V P D P Y F T G N F E E V Y E L V D A G C E V L L E K L K Q D L A S K
UniRef90_UPI0003F997B2  K E V P D P Y Y T G N F N E V Y D I I T E G C S H L L Q H I L K Q H Q L
UniRef90_Q2BNP1         S E V P D P Y Y G G G F E H V L D L V E A A S E G L L Q E I E R Q L
UniRef90_UPI0003829D7F  S E V P D P Y Y G G G F D H V F D L V E S A S L G L L A H I K K H H
UniRef90_R2Y3S7         K D I P D P W Y T G D F E E T Y Q L I Q K G L N E W L
UniRef90_E8RKH3         K D V P D P Y Y G D D F D A V Y R L C D E A S A A L L R T L T K
UniRef90_A0A011PPL1     D E V P D P Y Y G H G F D L V L D M I E D A A Q G L V E S I E Q Q L
UniRef90_K8FBM2         M D V P D P Y Y T G D F E E T Y R L V E A G T S E W L K K I K A Q L K
UniRef90_F8I3A1         H D V P D P Y Y E G N F D E V Y R L V E T G A R R L I D Q I R Q E H G L
UniRef90_H8YY13         R E V P D P Y Y G G G F D R V L D L V E A A S A G L L D D I R R R L
UniRef90_UPI0004789C1E  V N I P D P Y F T G N F D Y V Y E L I Y Q G C N K L L D Q I K L D H H L K
UniRef90_I5BQG4         L D I P D P Y Y G D G F A S V Y Q T I R E A S E A L L S K L A
UniRef90_D5WTL0         R E V P D P F F T G T F D Y V Y R L V E A G C R G L L E H I Q
UniRef90_V4NXD6         K D V P D P Y Y G D D F E T V Y N L C D K A S V A L L A K L T K
UniRef90_L1LTF2         D E V P D P Y Y G G G F E H V L D L I E A A C R E L V S E L K G R L
UniRef90_B0KF44         D E V P D P Y Y G D G F E Q V L D L V E A A C Q A L V L E I K G R L
UniRef90_A5GVR2         S E V P D P Y Y G G G F E H V L D L L E D A C S G L L K R L R
UniRef90_H0K902         A E V P D P Y Y G E G F V E V L G M I E R A V D G L L D W V R Q R
UniRef90_C5BL27         S E V P D P Y Y G G G F E T V L D L L E D S C D G L L K E I E R D S
UniRef90_G4T056         R E V P D P Y Y G G G F E R V L D L V E E A A A G F L N R L R E K G E I
UniRef90_W7CTG7         Q E V P D P Y Y T G N F D E T E R L V S A G C E G L L R A I R E R Y S I
UniRef90_M5F2P3         R D V P D P Y Y L D A F A S V Y R M I R E A S E T L A T R L A A R
UniRef90_C7NDX4         R E I K D P W F T G D F D T T Y D D V K G C K A L L E F I K K N
UniRef90_S1QZ61         K E I P D P W Y T G N F E E T Y R L L S L G L K P W Y E K I K
UniRef90_A0A023WQY3     D V V P D P Y Y G D G F E E V L D L I E E A C D A L L T E V K G R L
UniRef90_UPI0003B452C1  D E V P D P Y Y G D G F E L V L D M L E Q A S Q V L L D E I K A R L
UniRef90_UPI000409B79F  S E V P D P Y Y E D A F D A V F D L C D R A V R A F I E K I E R
UniRef90_F5J1M9         H D H P D P Y Y A D G F E L V L D L L E D A C E L L D K L K K N
UniRef90_UPI0003B7421F  R H V P D P Y Y G G G F E R V M D M I E D A C E G L L R H L Q A Q L Q R E
UniRef90_W5YF50         Q E V P D P Y Y G D G F E F V L D L I H E A G E G L L V D I R E R L
UniRef90_T2BD04         Y D E P D P W Y S G N F D E T Y Q I I S L A C K N L L S H L Q K
UniRef90_F4HEN9         K D H P D P W Y T H N F D E T Y R L L D R C C D A L L Q K V K Q K
UniRef90_A8LI12         A E V P D P Y Y E D N F P E V F D M L E A A S R G L L A R L
UniRef90_J1IJD5         D E V P D P Y Y E G G F E T V L D L I E R A C D L L V I E L K G R L
UniRef90_UPI00041AB5AB  Q E V P D P Y Y G D G F E S V F Q L L D S A C E K I A Q D L N Q K H
UniRef90_R2SEK4         Q G I P D P W Y T G D F D E T Y R L I N E G L P Y W L
UniRef90_UPI0003B3BE98  G E V K D P Y Y G D D F R E V Y W T L E A A L K A F L D R
UniRef90_N6WQB7         D E V P D P Y Y G D G F E L V L D L I E D A C D G L I K D I R E N
UniRef90_A0NZR4         Q D V P D P Y Y G D G F E Q V Y Q L V R T G G E R L L Q D L T A R
UniRef90_A0A023X4M4     T E V P D P Y Y G D G F A E V L D L V E A A S E R L L E E I R R E R L F R G
UniRef90_UPI0003695078  S E V P D P Y Y G D G F E H V F D L V D E A S A G L L T A I R R D H G L
UniRef90_UPI00047BD84D  S E V P D P Y Y G D G F T K V L D L I E Q A S D G L I A A L K Q
UniRef90_UPI0002D67100  D E V P D P Y Y D G G F E E V L D L V E R A C D L L V I E L K G R L
UniRef90_UPI0003664EFE  S E V P D P Y Y Q D G F E R V Y L M I D T A C R G L L S Y I T K N
UniRef90_A0A011PVQ2     D E V P D P Y Y G H G F D L V L D M V E D A A D G L I E S L E H R L
UniRef90_S0ETV5         L E V P D P Y Y T G E F A L V Y E L L D K A T D G L L K A I C N E H H L
UniRef90_U3AXP0         L D E P D P Y Y G D G F E Q V L D L I E Q A S D A L L A E I R G R L
UniRef90_D3PLX3         G E V P D P Y Y G G D F E A V Y Q M L D G A L E A F F Q K
UniRef90_I2GTI9         P N V P D P Y Y E E V F E E V Y Q I V L R C C R Q L L A Y L A Q Q H N L
UniRef90_R6KMB6         R D I A D P W Y T G N F E L T Y R D I V E G C E K F L E Y L R R K G S I
UniRef90_J2G442         Q D V A D P Y Y G E G F E E T W R Q V S E A A R H L V A E L Q R
UniRef90_UPI000465DCEF  R E V P D P Y Y G D G F E L V L D L V E S A C D G L L Q H I K T Q
UniRef90_Q0A8Q7         Q E V P D P Y F G G G F E H V L N L V E D A A E L L A E L
UniRef90_B6IVE4         R D V P D P Y Y G D H F E E V L D L V A V G A E G L L A E V S R R L G
UniRef90_R7J718         Y D Y P D P Y Y A E G F E L V L D L L E D A C R G L L A R V I
UniRef90_UPI00047B1F63  A D V P D P Y Y T G N F D E V Y E L V K E G C A R L L A V V K E R
UniRef90_R8W438         R E V A D P W Y T G N F D Q T F T D V L S G C K A L L E Q L T Q E
UniRef90_L9P9N3         S D V P D P Y Y G G G F D L V L D Y I E D A S D G L I K Q L R K
UniRef90_M1FKC8         Q E V P D P Y F G D G F Q H V L E L I H Q A G E G L L N D I R G K L G
UniRef90_Q8U528         E N V P D P Y Y G D G F L D V Y N M L L A G C R S L L E K M E
UniRef90_V6Q4X9         S E V P D P Y Y T G D F D E T Y Q L L D K A T N H W L D E W E N E
UniRef90_A1K5X4         D E V P D P Y Y G G G F E M V L D M C E A G V D G L L D R I
UniRef90_E6J9V4         A D V A D P Y Y G D G F T R T R M Q I S R A L P G L V A E V R E
UniRef90_R7A159         R D I A D P W Y T G N F E I T F N D I V E G C N G L F E Y L K S N G R I
UniRef90_UPI00037A7A31  V D V P D P Y Y G S D F D S V Y D M L D E V C E L V A A K L I K E H S
UniRef90_R9IMB8         R D V A D P W Y T G D F E K T Y Q D V V A G C T G L L A K I K Q E K C L
UniRef90_R6Z5Z4         R S I A D P W Y T G D F E R T Y R D V D E A C D A F L S Y L I Q K G E
UniRef90_F8I0I4         K E I Q D P W Y T R R F D V T Y R E L K E T L P A W L V Q I K A D L K
UniRef90_L0B6F5         R E V P D P Y Y G N G F K L V I D Y I E D A C N G L I D Y L
UniRef90_K7AFM3         R E V P D P Y Y G G G F E Y V L D L I E Q A G A D G F I K H L K
UniRef90_UPI00046DFE6E  E E V P D P Y Y G G G F E K V L D L L E D A C E S L L D S I L A E N K
UniRef90_F9TCK0         E E I P D P Y Y G G G F E L V L D L I E E A S E N V L K S L
UniRef90_H8WCM6         A E V P D P Y Y G D G F E H V L D L H D A S S G L L D E I R G R L
UniRef90_R7JJF5         T H V P D P Y Y E E G F E L V L D M L E D A C R T L L E L E K R
UniRef90_B5H5Y5         L D V P D P Y Y G D G F E D C L E M V E A A G K G L L D A V R T A L E E R A
UniRef90_K0NTR8         N D I D D P W Y S N D F E T A F Q E I K R G C E G L L A K I V E D
UniRef90_R6HHX0         G N V A D P W Y T E D F E A A W Q D V L D G C Q G L L T A E
UniRef90_W8L4J9         K E V P D P Y Y G G G F E R V L D M V E D A S R G L L E Q I R R E H G
```

```
                    1         10        20        30        40
UniRef90_D0I6U5          M S N P L K I L V V C M G N I C R S P T G E A V L R A K A Q A R G L D   V V
UniRef90_E6J127          A M K K I V F V C L G N I C R S P M A E F V M K D L T       D D V Y
UniRef90_F5T1N0          N Q I K V L F V C L G N I C R S P T A E G V F T K L T E D G T R D R F L
UniRef90_T1IH30    A S S S T P K S V L F V C L G N I C R S P I A E A V F N H V A K E K G V E Q W T
UniRef90_R5JV20            M I K I L F I C Y G N I C R S P M A E Y I L K D M I E K R N L S Q F E
UniRef90_UPI0003637841     K P F H V S F V C T G N I C R S P M A A L V F G E H L R N A G L D R V E
UniRef90_A8YUG2            M K K I L F I C H G N I C R S P M A E A V M Q H L I K E N G L E D L Y
UniRef90_W2UQ83              K K V L M V C L G N I C R S P L A E G I L K D K V D P     S L V Y
UniRef90_J2KN49           K P Y S I L F V C M G N I C R S P T A H G V F Q H K V M E R G L H Q V Q
UniRef90_UPI000476A84E     A K I R V L M V C L G N I C R S P M A H G V F E A R V R E H G L E D I E
UniRef90_UPI0003609937  M S K I A E I S F V C L G N I C R S P L A Q G V F Q D L V N G E K L D Q I I
UniRef90_R5GYV0             M Y K I L F V C H G N I C R S P M A E F I F L D M L K K R N I T E V T
UniRef90_L0GU91       S Q R I K V L F V C M G N I C R S P T A Q G V F G K V V R E A F A E R I L
UniRef90_V9WI51               N I L F V C L G N I C R S P A A E G V F R A L C P E       V A
UniRef90_A4EXL2      M A T M T K V L F V C L G N I C R S P A A E G V F R S L C P         N V A
UniRef90_B4EDS9            M T R I C F V C L G N I C R S P T A E G V M R H Q V D A A A L D R I A
UniRef90_A0A059MP02           H T F V C T G N I C R S P M A E K I F A E H L R R A G L E R V R
UniRef90_V9KKA5             K S V L F V C L G N I C R S P I A E A I F R K L A D Q G V V D K W M
UniRef90_P41498         G S K S V L F V C L G N I C R S P I A E A V F R K L V T D E N V D N W R
UniRef90_I3YAX7          A K V K V L F V C M G N I C R S P T A H G V F R Q M V M D E G L S H V E
UniRef90_F0TEA8             M K K I L F V C H G N I C R S P M A E A I M Q Y L I K Q N G L E D Q Y
UniRef90_UPI0002C3D05F       M K I L F V C L G N I C R S P A A D G V M K K L V K S R G L S K Y I
UniRef90_UPI00041F9193       M R I L F V C T G N I C R S P T A E A V M R A K L A A A A G L D H A
UniRef90_D5CSQ5        G K V R I L F C C M G N I C R S P T A E A V F R H Y V A Q A G L E R I   H
UniRef90_UPI0003657B1E           F V C T G N I C R S P M A E K I F E Q H L R E A G L D S V R
UniRef90_B1KRA5       M K Q V S S V L F V C M G N I C R S P T A E A V L R M K A K Q S G L E   L E
UniRef90_UPI0003B381FF A H S N D S L N I V V V C T G N I C R S P M G E I I L R D R L E E E G L D D V T
UniRef90_G4L342            M Q K V L F V C L G N I C R S P M A E G L M K Q Y S K   A R G H I L P
UniRef90_R5BRJ7            M I K I L F I C H G N I C R S P M A E F L F R D Y V K K Q G A G H E L F
UniRef90_A4BE05             M K L L F V C L G N I C R S P T A H G V M V K Q L A D A R I D F V E
UniRef90_UPI000380BC64     M L H I D F V C T G N I C R S P M A E V I V R D A L A Q E S L D D V R
UniRef90_T1VQJ6            P L H V T F V C T G N I C R S P M A E K I L L A H L G R E G L D R V R
UniRef90_A2SI31            P F R V L M V C M G N I C R S P T A E G V L R A R L A A A M A E W V L
UniRef90_A0A037ZKS0          T R I L F V C L G N I C R S P T A H G V F V A Q A D A Q G V P   V Q
UniRef90_E0P1S8       K T K D K V N I L F V C H G N I C R S P M A E F V M K H L V R E A G L N H I R
UniRef90_R6FRK5       K Q Q P K H K I L F V C L G N I C R S S S A E G V M R H L V E E A G L E Q F V
UniRef90_D2ASG1            Y R V C V V C M G N I C R S P M A E V V L R K T L A D H G L D V V S
UniRef90_UPI000303CD3F     M R N I L F V C T G N T C R S P M A E A V L R H K A N S E Y         E
UniRef90_A0A023FH82         K S V L F V C L G N I C R S P I A E A V F K H V A K E R V L D E W V
UniRef90_Q0KCH5                 M C C M G N I C R S P T A E G V L R A K L A A A G L D A V E
UniRef90_UPI000309780A    M Q N V L F V C L G N I C R S P M A E V I F R H L V A E A Q A E K I N
UniRef90_K0C590        M E A I K V L F I C M G N I C R S P T A H G V F R E M V K A K F Q H S I H
UniRef90_M1X240             Y K L L F V C L G N I C R S P S A E N I M N H L I L Q S G L E R I I
UniRef90_F9VBB3            M E K I V F V C L G N I C R S P M A E F V M K D L V E K E   G K N F E
UniRef90_W0DIG6             M S V L M V C M G N I C R S P M A H G V F A E R L R E A G L D T V E
UniRef90_A6EB03             M K I L M V C L G N I C R S P L A E G V M R Q L V A E A G L D   W Q
UniRef90_A2QNG9        G Q V N V L F V C L G N I C R S P M A E G V F R N V A A S H P L I N   E
UniRef90_F0EZN3            M K K I L F V C L G N I C R S P M A E Y I L R D M A Q K R G I A   V N
UniRef90_R6SRP8            M I K I L F I C H G N I C R S T M S E Y V M K Y L T D Q A G L S E F Y
UniRef90_F3NI13           M H L C F V C T G N I C R S S A A L V L A E H L R R A G L D G V E
UniRef90_F5S9X9           M K K I L F I C L G N I C R S P M A E Y I F R D M A Q Q R G I   V V Q
UniRef90_S2XXB3            Y R V C F V C T G N I C R S P M A E S V F R A R I A E A G L D G V E
UniRef90_UPI0002892FD7  S T T F K I C F V C T G N I C R S P M A E A V F T D L V A Q A G L D R I S
UniRef90_UPI0003EAB627 A K A K P F S V L F V C L G N I C R S P A A E A V F R N L V S K R R L D S F L
UniRef90_R5F6U5        K K P V K I L F V C L G N I C R S P A A E G V F K H M L R Q R G I G R F E
UniRef90_T2KMH3            M T K I L M V C L G N I C R S P L A E G I L R S K L P Y       E D F V
UniRef90_A0A031JM46      M S A S V L F V C L G N I C R S P M A E A A L R A E A G R A R I S   I E
UniRef90_F2JIU5           M I R V M F V C H G N I C R S P M A E F V M R D M V N K R G L S Q F Y
UniRef90_Q8DHY3           P I R L L F V C L G N I C R S P A A E G I M K D L V K K A G L E H I Q
UniRef90_R6AV52           M I K I L F V C H G N I C R S P M A E F V L K D I V E K R G L S N F E
UniRef90_R7ZU36           M I K V L F I C L G N I C R S P L A E A I F N A K V T A K G L G R I C
UniRef90_A6LEA9       E E K V R L L F V C L G N I C R S P S A E A V M K R L V K D A G L D R I E
UniRef90_Q17G80      Q M A D K K K A L F I C L G N I C R S P I A E A V F L K T I R E A G V D Q W E
UniRef90_UPI000475C0FF     Y R V C V V C M G N I C R S P M A E I V L R R V L E E R G L G R V V
UniRef90_UPI0003EAD9B1      K S V L F V C L G N I C R S P I A E A V F R K M A T D R V V G N W F
UniRef90_R6FNF3           M T K I L F V C H G N I C R S T M A Q V L Q H M V Q A M A E Q F Y
UniRef90_B5CS11           M I R V L F I C H G N I C R S T L A Q S F F T H L V N T H G L D Q F V
UniRef90_UPI0002891359    M K R I L F I C L G N I C R S P M A E A V M K H L V A E Q G T S Q W H
UniRef90_R5W0A9            K T R I L F V C L G N I C R S P A A E G I M R R L V E R R G L S G F G
UniRef90_H1H9G0           M T K I L F V C L G N I C R S P L A E G I L Q S K L S T     E S F F
UniRef90_G7GPX1      M S D D L H I C F V C T G N I C R S A M A Q N I F R S A L A G A G L D R V R
UniRef90_R5U568           M I K I L F I C H G N I C R S T M A Q Y V F Q N L I N R H N L D Q F Y
UniRef90_UPI00047B9ECC  M E N K K V L F V C L G N I C R S P M A E Y L F R E I A A Q R G L P V Q
UniRef90_F1LE52        S K H K S V L F V C L G N I C R S P M A E A I F V D T V K K N G L D E W T
UniRef90_R5RIP2            K K K I L F V C L G N I C R S S T A E G V M L H L I R E A G L D Q F M
UniRef90_UPI00035F579C         M F V C T G N I C R S P S A E G F F R A L V E R E G L S G I E
UniRef90_A2U478           M T K V L M V C L G N I C R S P L A E G I L Q S K I N T   D T I F
UniRef90_H7ELJ9           M K R I L F I C H G N I C R S P M A E M V F K H I A A S R K G A D F F
UniRef90_N2AMG8            M I K I L F I C H G N I C R S P M A E F V M K D M V K K A G A E L F
UniRef90_D2AMD9            K V K V L F V C K G N I C R S P T A H G I F R D I V K Q Y N L E H I D
UniRef90_R5ENP9           M I R V L F I C H G N I C R S P M A E F L L K D I V T K R G I N Q F Y
UniRef90_Q0FQR7                 S I L F V C L G N I C R S P S A E G V V R Q M A A E R G L S   L E
UniRef90_R6B5E6       K G K H T V L F V C L G N I C R S P A G E G I M K S V E K A G L D E F E
UniRef90_I3ZX01           M K T V L M V C L G N I C R S P L A E A I L R S K I G D R   D I K
UniRef90_A3CK24           M K K I V F V C L G N I C R S P M A E F V M K S L T     D Q L K
UniRef90_UPI00040B54A8     M I K V L F V C T G N I C R S P I A E E T F R R A V K K R D L Q R I Q
UniRef90_UPI0002197582     M K K I L F V C L G N I C R S P M A E M M M Q N L V E G L D Q I T
UniRef90_UPI00034CA436    P Y K L L F V C L G N I C R S P A A E N I M N H L I E Q A N L S D R I
UniRef90_V6SB73                 M V C L G N I C R S P L A E G I L Q S K L P K E H     F L
UniRef90_F2BEE0           M T R V L F V C L G N I C R S P M A E Y V M R R T A A E R G L S Q I Q
UniRef90_R9MP13           M I K I L F V C H G N I C R S P M A E S I M T H L V S K H G L D F Q
UniRef90_UPI0004729DC2  M S T T S I L F V C L G N I C R S P T A H G V F E S L V S K H G L N M I R
```

```
                              50                  60                  70                  80
UniRef90_D0I6U5         I D S A G T I G Y H T G A K P D E R A R K A G E A R G Y D F T G I Y S R Q V N D
UniRef90_E6J127         V E S R A T S D W E H G N P I H S G T Q A I F K K Y A I P Y D K S K T S Q Q Q D
UniRef90_F5T1N0         I D S A G T H A Y H V G E E P D S R A Q Q T A K Q R G I D L S Y I R A R K F N Q
UniRef90_T1IH30         S D S A A I G S W H I G K N P D H R A R S C M K E H N I A M D H K A R Q V K K A
UniRef90_R5JV20         I A S A A T S T E E I G N P I Y P P A K E E L R R H Y T D F S G K R A R Q V T A
UniRef90_UPI0003637841  V S S A G T G P W H V G E S A D P R T G A V L A D H G Y P T E H T A A Q L D E H
UniRef90_A8YUG2         A E S K A T T Q D A L G R S I D T R A Q R E L E K N R I P Y D R S H R A S Q M D
UniRef90_W2UQ83         V D S A G T A G Y H V G E Q P D P R S I A I A Q K H L I D I T N Q K C R Q F Q D
UniRef90_J2KN49         V D S A G T H N Y H P G N P P D E R S Q A H A A G R G Y D L S G L R A R Q I S D
UniRef90_UPI000476A84E  V D S A G T A G Y H I G A K P D P R A R Q E A R S R G Y D L E H L R A R K P E D
UniRef90_UPI0003609937  V T S A G T G G W H I G D L P D K R M R Q T A Q S K G I K L E S R A R Q Q S A D
UniRef90_R5GYV0         A A S A A T S T E E I G N P V H Y G T A A I L R R L G I D F S A K R A R Q M T R
UniRef90_L0GU91         I D S A G T H A Y H V G E P P D P R A Q K T A R A R G I D L G D L R A R L A E D
UniRef90_V9WI51         T D S A G T A G Y H V G S P P Y G P M Q A A A K V R G F D L S D L R A R Q F Q D
UniRef90_A4EXL2         T D S A G T A S Y H V G D P P Y G A M Q Q A I R G R G F D I S D L R A R Q F R P
UniRef90_B4EDS9         I D S A G T G D W H V G E P P D T R A Q A A A R S R G Y D L S A L R A R Q V S D
UniRef90_A0A059MP02     V T S A G T G D W H A G E D A D P R T T D L L R R H G Y P T G H C A R R V T D E
UniRef90_V9KKA5         I D G A G V S D W N V G S S P D S R A V S C L K E H D I E T A H K A R Q V K D D
UniRef90_P41498         I D S A T S T Y E V G N P P D Y R G Q N C M K K H G I H M Q H I A R Q I T R E
UniRef90_I3YAX7         I D S A G T H A Y H L S E P P D R R A R E T A L G R G V D I G D L R A R V A E D
UniRef90_F0TEA8         V A E S K A T T Q D A G R G I D P R A Q R E L E K N R M P Y D R G H R M T A K D
UniRef90_UPI0002C3D05F  I D S A G T A G Y H S G D Q P D S R M R A A G L G R G Y T F D H I S R Q V K Q S
UniRef90_UPI00041F9193  V G S A G T H G F H A G E P P H P P A I R A A A A R G Y D L R P L R A R K R A D
UniRef90_D5CSQ5         I D S A G T H D Y H I G E A P D V R T Q R A A K Q R G Y D M S D L R G R Q V E D
UniRef90_UPI0003657B1E  V S S A G I D G W H E G E G A D P R T V A E L D A H G Y D S D H E A A Q V N D D
UniRef90_B1KRA5         I D S A G T L A Y H Q G E S P D P R S V A A G E R R G F S F K G M K A R Q D E D
UniRef90_UPI0003B381FF  V S S C G L G G W H V G E G A D E R A V A E L Q R S G H D G R K H R A R Q N S A
UniRef90_G4L342         I D S A G T S S W E Q G N L P H P G T Q A I L K R E G V D F S S M R S R P I T D
UniRef90_R5BRJ7         I A S A A T S T E E I G N P V H R G T R R I L E E L G I S C A G K H A R Q M Q D
UniRef90_A4BE05         V D S A G T A A Y H I G N P P D S R T Q A A A E R R G Y D L S G L R A R Q P E D
UniRef90_UPI000380BC64  L T S S G I G S W H V G K P A D E R A L A E L S Q N G Y N G S Q H R A E Q F G G
UniRef90_T1VQJ6         V S S A G T E G F H T G S E A D E R T N V V L R A A G Y P T G H S A A Q V N A D
UniRef90_A2SI31         V D S A G T H A Y H V G E P P D E R S R A Y A A R R G Y D L S A Q R A R D D D D
UniRef90_A0A037ZKS0     V E S A G T G G W H I G D P P D A R A T A E A A A R G Y D L S A L R A Q Q V Q D
UniRef90_E0P1S8         V A S K A L H T D E I G S D T H H G T R A V L D A H T I P Y E K R S A A L M T R
UniRef90_R6FRK5         I D S A G I L S Y H Q G E L P D P R M R A H A I R R G Y N L T H R S R P V R T S
UniRef90_D2ASG1         V D S A G T G G W H Q G H P M D E R A S A M L A D N G Y D G S S H R A R Q F G W
UniRef90_UPI000303CD3F  V K S A G V F A H V G S P A S Q N S V E V L T K Q S I P I N H K S A Q L D D E
UniRef90_A0A023FH82     V D S A A T G D W H V G R K P D R R A I Q C M K D H N V E M D H R A R V T T D D
UniRef90_Q0KCH5         L D S A G T H E Y H L G R A P D P R T Q R H A L Q R G Y D L S A L R A R K V P D
UniRef90_UPI000309780A  V D S V A T S S W E G N P P H P G A V H M L A E H G L S A D G L H S R P I K D
UniRef90_K0C590         V D S A G T H A Y H I G K S P D P R S V Q A A H E R G I D L H D L K A R Q D Y D
UniRef90_M1X240         C D S A G T S G Y H I G N S P D Q R M S A T A I R K L G F P L V G K A R Q F Q D
UniRef90_F9VBB3         V E S R A T S S W E H G N P I H P G T R A L L T A Y G I P F D A T K G S Q Q I D
UniRef90_W0DIG6         V D S A G T H G Y H V G A P P D R R A Q A A A G E R G Y D L G A L R A R R P E D
UniRef90_A6EB03         V A S A G T G N W H V S Q P A D K R S I A V A R D F G Y D I S K Q R A Q Q F N M
UniRef90_A2QNG9         I D S A G T G A Y H A G E D P D S R T M S T L R R H N I R N Y N H A A R K K Q D
UniRef90_F0EZN3         V A S A G T S G W H D G E Y M H C G T A E I L D G L S I E S R D F R S R K I P A
UniRef90_R6SRP8         I D S A A T S R E E I G N G V H H G T R Q K L K E V G I P C G N H R A R Q M M R
UniRef90_F3NI13         V S S A G I E P W H A G E P I D E R S G E V L A R H G Y P V E H V A A Q L G A E
UniRef90_F5S9X9         T A S A G T S G W H D G E F M H C G T A D I L D G L N I D S R A F V S Q K K S D
UniRef90_S2XXB3         V D S A G T G G W H E G D G A D P R T V S V L R E S G Y G T E H R A R R F E S W
UniRef90_UPI0002892FD7  V T S A G T G D W H V G E A A D N R T I T A L A A R G Y N G S G H R A R Q F D P
UniRef90_UPI0003EAB627  I D S A G T I G Y H E G N K A D S R M R S A S K K R G I E T S I S R P V K P S D
UniRef90_R5F6U5         V D S A G T Y G G H A G E L P D P R M R S H A A R R G Y L L E H R S R P V R P D
UniRef90_T2KMH3         V D S A G T S N Y H I G S N P D N R S I T V G N K Y G I N I S N L M G R Q F R D
UniRef90_A0A031JM46     V D S A G T G D W H V G R P P D P R A Q A V A L R N G F D I S G Y S G R Q V Q D
UniRef90_F2JIU5         I A S S A T S T E E I G N G V H Y G T K R K L K E Y N I L T D G K C A V Q K K D
UniRef90_Q8DHY3         C D S A G T S N F H V G D P P D A R M V M T A R Q R Q L H L T H R A R Q F H A D
UniRef90_R6AV52         I A S A A T S N E E I G N P V Y P P A Q A E L R K H Y T N F S E K R A R Q V T K
UniRef90_R7ZU36         S D S C G T S D F H I G E L P D E R T L A C A D R H G I P I N H R G R Q L R R D
UniRef90_A6LEA9         I D S A G I T G Y H E G D R A D S R M R A H A A R R G Y V L D S I S R P V R Q W
UniRef90_Q17G80         V D S A A I G G W H V G N L P D H R A L A T M K K H E L P Y E N R A R Q I T K N
UniRef90_UPI000475C0FF  V E S A G T G G W H V G E P M D E R A L G I L A E R G Y D G A A H R A R Q F D W
UniRef90_UPI0003EAD9B1  I D S G A V S D W N V G C S P D A R A L A C L R K H G I E T N H R A R Q V T K D
UniRef90_R6FNF3         I D S A A T S F E E I G N G V H S G T R K K L A Q V G I H C G N H K A R H K S D
UniRef90_B5CS11         I D S C A T S R E E I G N P V H R G T V N K L R E M G I P V V P H Q A R Q I T W
UniRef90_UPI0002891359  I D S A G T S N W H E G E R P H K G T L A K L A Q Y D I S T D N M Y S R V R E D
UniRef90_R5W0A9         I D S A G T Y G G H R G E L P D P R M R S A A S R R G Y A L T H R S R Q V R E D
UniRef90_H1H9G0         V D S A G T G D W H I G S Q P D K R S I A V A K K Y N I D L T T Q R A R Q F K D
UniRef90_G7GPX1         V T S C G T S G F H T G E P A D N R A R T E L L A N G Y P D D H V A A Q L S P E
UniRef90_R5U568         I D S A A T S R E E I G N P V H H G T R R K L K E V G I P C G D H R A R Q K R E
UniRef90_UPI00047B9ECC  C A S A G T S G W H D G E F M H C G T A D I L D G L Q I D S K G F T S R K L R D
UniRef90_F1LE52         I D S A A L I D Y H V G M Q P D K R A I R T L N K F G L S D Y K H K A R Q T E D
UniRef90_R5RIP2         I D S A G I L A Y H Q G E L P D S R M R A H A A R R G Y E L V H R S R P V R T E
UniRef90_UPI00035F579C  T D S A G T G A W H V G E P P D R R S Q A A A R R R G V E L A E L R A R K V E D
UniRef90_A2U478         V D S A G T A A Y H V G N L P D E R S I A V A Q K Y G I D I T N Q R A R K F K D
UniRef90_H7ELJ9         V D S A A T T Y D A I G C P I H R G T R S A L V R N G I P F T E H V A R L V T A
UniRef90_N2AMG8         I A S A A T S T E E I G N P V H H G T R R K L Q Q F G I S T E G K Y A V Q L R K
UniRef90_D2AMD9         V A S C G T S S R H E G H G A D M R T L E M A K K Y D C D L S D Q V S Q Q L E E
UniRef90_R5ENP9         I A S A A T S T E E V G N P V H P G T K K K L A E H G I S C E G K R A V Q I T K
UniRef90_Q0FQR7         I D S A G T G W H L G D P P Y A P M Q A A A S A R G Y D L S A L R A R Q S R S D
UniRef90_R6B5E6         I D S A G I G N W H V G Q L P D R M R K C G A E H G Y D F N S H A R Q F K K D
UniRef90_I3ZX01         V D S A G T G D F H I G E R P D T R A K S I A Q K H N V S T E G I F C R Q F Q D
UniRef90_A3CK24         I E S R A T S S W E H G N P I H R G T Q A I F K K Y A I A Y D R D K T S Q Q I D
UniRef90_UPI00040B54A8  C D S A A T H N Y H I G D L P D H R T R K N A V N H G L D L T H R C R R L T G E
UniRef90_UPI0002197582  V A S R S T S Y E I G N P P H P G L A L K D K K L P I I H R A Q Q R Q D
UniRef90_UPI00034CA436  V C D A G T G G Y H I G R P P D R R M V A A A I A R A G M T F T G E A R Q Q K S D
UniRef90_V6SB73         V D S A G T G S W H V G Q E P D K R S L I A K N K G I D I T N Q R G R Q I K D
UniRef90_F2BEE0         A A S A G T S G W H V G E D M H R E T K A V L R R H G I D G G G F T S R R N R D
UniRef90_R9MP13         I D S A A T S R E E I G N P H Y G T V G K L R E M G I P L V P H A K A V Q M T K
UniRef90_UPI0004729DC2  V D S A G T A A Y H E G S V P D S R S Q E A A A S R G F S L T A I R A R Q D R D
```

```
                                       90              100             110          120
UniRef90_D0I6U5           F E A F D Y I L A S D K A N L A D L L D R C P D Y R N R V S L F L S H G T S P V
UniRef90_E6J127           F V D F D Y I I G M D K S N F Q D L R K I A P G K Y L E K V F Q F E         E
UniRef90_F5T1N0           F E E F D Y I L A M D S S N Y Q I L I N A C P D A Y H K V K M F L D Y A P R E E
UniRef90_T1IH30           D F N F N V I F G M D D E N I N D L K S I A P D S H T S I E L L G K Y D P E G K
UniRef90_R5JV20           A D Y E Y Y D Y I L C D N I R S T I R I T G P D R V G K I K L L L D Y A G R P G
UniRef90_UPI0003637841    H L S A D L L L A M D A G H L R V V R D A V A D P N R R L L R S F D P K A D E W
UniRef90_A8YUG2           Y D K Y E Y L I C M D E E N F A D M N R I T G G D P Q R K E H K L L E F A G S Y
UniRef90_W2UQ83           F D N F D F I F V M D Q S N Y Q N V L R L A R N K D D R M K V D Y I L H P K K N
UniRef90_J2KN49           F E R H D L I L A M D W D N L A L I Q E E C P A T Y H K V R R L T E F C L K H D
UniRef90_UPI000476A84E    F Q E F D Y I L T M D D A N Y Q N A E D I R P G G R A E L L R F L D F A P Q F D
UniRef90_UPI0003609937    F N R F N L V L A M D H S N L A R L E E I A P S N L P M L F R S F D P E C N G D
UniRef90_R5GYV0           A D N Y D L L I G M D G A N I R N M T R I A G E E Y A D K I R L L L D F T D R P
UniRef90_L0GU91           F R A F D Y V L A M D Q D N Y A H L A R I C P R G M E K L R L F M E F A P E R I
UniRef90_V9WI51           F D R F D L I V A M D G D N L A N I E A Q R P G A T T P V K L F T D Y A P G Q G
UniRef90_A4EXL2           F Q T F D L I V A M D D N N L S N I E A L R P V R L F T D Y A P Q S G
UniRef90_B4EDS9           F E R F D L L L A M D E A N L A E L R R R C P Q H R D K V R L L M E F A P G T E
UniRef90_A0A059MP02       Q L A A D L V V A L D A G H D R V L A Q L G V P A E R R V L L R S F D P D A E G
UniRef90_V9KKA5           F R T F D Y V L C M D N S N L Q D L K R K A D D C K A K I Q L L G T Y D P Q H Q
UniRef90_P41498           D F T F D Y I L C M D E S N L R D L N R K S N Q V K N C I E L L G S Y D P Q K Q
UniRef90_I3YAX7           F L Y F D Y I L A M D Q D N Y L N L N E I C P P G M D K L K L F M D F A P E L Q
UniRef90_F0TEA8           Y D E Y E Y L I C M D E E N F A D M N R I T G G D A Q R K E H K L L E F A G S Y
UniRef90_UPI0002C3D05F    D F N F D I I V A M D D S N Y S D L M Y N C P E Y Q D K I H K M V E Y C K K K D
UniRef90_UPI00041F9193    F R R F D L L L A M D R T H L D R M R R I A V A G P G R I G L F L D H A P G E G
UniRef90_D5CSQ5           F K R F D Y V L A M D E A N L D I L Q R L R P D A Q S H L G L F L E F E C Y R E
UniRef90_UPI0003657B1E    H L G A D L L V A L D T G H V R E L L R L G A P A D R I A L L R S F D D D A D D
UniRef90_B1KRA5           F A H F D L I L A A D V Q N I R E L Q S R C P E Y L D K I K L M L S H C E E G E
UniRef90_UPI0003B381FF    D L Q A D L L V A M D A G H R D A L I D K G A D P E R R L F R S F D T S A P R G
UniRef90_G4L342           E D Y F D W I I A M D H Q N V A D L I A R A P Q T A N K V H L Y M E V V N G K Q
UniRef90_R5BRJ7           Y E Y Y D Y I I G M D Q W N I S N I M R I I R K D P E G K V F K F L D F S E H P
UniRef90_A4BE05           F Y E F D Y I F A M D E S N L N D L Q Q L Q P E S K A R L L L A L A F S A E R G
UniRef90_UPI000380BC64    D R Y E A D L I V A P N H V S E L I A R G V P E D R I R L L R S F D P A S P E G
UniRef90_T1VQJ6           H L A A D L V V A L D T G H E R E L A H L G V P T E R R R L L R S F D P E A D G
UniRef90_A2SI31           F E R F D L L L A M D W D N L A L L Q E R C P Q A Q R K L R R L M E F G R T A G
UniRef90_A0A037ZKS0       F D R F D L I I A M D T S N L A A L E R M R P G N T T P V E L F L R Y A E T D R
UniRef90_E0P1S8           A D Y Y D I I I G M D E E N M R D L A R L T G G D P K G K V H R L L S Y I G E N
UniRef90_R6FRK5           D F Y F D L I I G M D D R N I E D L K E R A P E T E R K I R R M T D Y C T R H A
UniRef90_D2ASG1           F G Q V D L V L A M D T D N L R A L R R L A P G S D V R L F R S F D P A A P P G
UniRef90_UPI000303CD3F    L E W S D L I L T M T N A H K K L I L E R Y P K A A D K V Y S L L E F A L N S P
UniRef90_A0A023FH82       F T N F Q Y I F G M D E A N I S D L H D L K P K S T A Q I E L L G K Y D P E G K
UniRef90_Q0KCH5           F D R F D L I L A M D R E N L A G L A R L R P D A G A K L R L L M S F A T R H D
UniRef90_UPI000309780A    L A W A D W I I T M D R S N L A N L K Q L T P E D L S K V H M A Y E I V P G K G
UniRef90_K0C590           F E E F D Y L L V A D K D N Y Y L T L E S C P K H R H K I K F I L D F A T R T S
UniRef90_M1X240           F Q E F N L I L A M D L D N Y K N I L S L N P E H K H K V H L I C D F C S Q Y K
UniRef90_F9VBB3           F Q Y F D Q I I A M D E S N K E N L E K M A P A D Q K H K I K M L         L N
UniRef90_W0DIG6           F H H F D Y I V V M D E E N L Q N A L A L Q P D A R A R V H R F L E F A P R A E
UniRef90_A6EB03           F E S F D H I L V M D R N N L R D V L R D H P E Y R R K V M L F L       P D E
UniRef90_A2QNG9           F L D F D Y L L A M D K Y N L R D L L D V R A K V   A E V R L F G D F G T G G V
UniRef90_F0EZN3           D A L Q Y Y D Y M D D S N L R D V Q A A L G N D K R I F K I T D L L G E G S L H
UniRef90_R6SRP8           Y E E F D Y I I G M D A W N I R N I M R I I G D P E K K V F M L L D F T D R P G
UniRef90_F3NI13           H L D A D L F L A M D R G H E K A L R R L V A D P R V R M L R S F A P D A S G G
UniRef90_F5S9X9           F L D Y D Y L I V M D D N N L R D V Q K L F G K   H D K I F K I T D L L G K S H
UniRef90_S2XXB3           F S R L D L V I A L D S G H L R A L R R L A P T P Q D R L L R S Y D P A A G D D
UniRef90_UPI0002892FD7    E W F S R L D L I F D R G Q E R I L R T W A P N D Q D Q P M L S F D S E L A P L
UniRef90_UPI0003EAB627    F R D F D L I L A M D R Q N Y E D L L S S F E R W R H R V K L I C S Y C K R H E
UniRef90_R5F6U5           F E K F D L I L G M D D Y N I D T L R S M A P E E A A K V K R V T D Y C R H Y P
UniRef90_T2KMH3           F D E F D L I I Y A M D A A N Y R D I A R N E A D K S K V K M I L N E V Y P N Q N
UniRef90_A0A031JM46       F Y R F D F I F A L D S E N L A N L R K L Q P A T G K A E L R L L M D P G R E G
UniRef90_F2JIU5           Y N A Y D Y F L G M D S R N I T N M R R I L G D D P K K K I Y R L L D F S P C P
UniRef90_Q8DHY3           F E E F D L I L A M D R E N Y Y D I L R L D P A Y R D K V R L M C D F C R H H D
UniRef90_R6AV52           E D Y R Y Y D Y L L C N N I K N T I R I T G P D V D G K I K L L L D L P K R K G
UniRef90_R7ZU36           F R D F D Y L I T M D T S N Y Q N L A H R H K L K V S H V H L L G E F S G S F I
UniRef90_A6LEA9           D F H F D L I I G M D E N Y Q N L T D L K R M A P D S V A K I H R M T E F S R N K L
UniRef90_Q17G80           D F H Y D Y I F G M D Q E N M S D L K S R A P S K A K Q L F L G D Y D T D A P G
UniRef90_UPI000475C0FF    F D R Y D L V L A M D R D N L A N L R R L A P G V E V R L F R S F D P A A P A G
UniRef90_UPI0003EAD9B1    D F T F D H I L C M D E S N L R D L N R K A N Q V K N K I E L L G T Y D P E K Q
UniRef90_R6FNF3           Y D Q F D Y I I G M D S A N M K N I A R I V G N D Y K K V Y K L L Q F A G E T
UniRef90_B5CS11           S D Y F D Y I I G M D S A N I R N L H R M R G D P D K K I S K L L D Y T S R K G
UniRef90_UPI0002891359    A D R F D V F V C M D A Q N V E D A R H I L G T N V P I T T L         L A N
UniRef90_R5W0A9           F D R F D M I V A M D D M N Y E S L N R L A P E A A R K I F R M A E F C R R H P
UniRef90_H1H9G0           F T N F D R I Y V M D K S N Y E N V I K L A P E A K N K V K L I L E N T P G Q N
UniRef90_G7GPX1           H Y D A D L F V A A D H G H V R D L E R K R L G D R V R L L R S F D P V G P G D
UniRef90_R5U568           Y D E F D Y L I G M D S M N I R N M M R I G G D P E G K V S K L L D F T E R T G
UniRef90_UPI00047B9ECC    A D F A E Y D Y V M D D N N L R D V R A R F   G T H D K I F K I T D L C P D C G
UniRef90_F1LE52           F R T F D Y I M G M D E N N M K D L R E I A G D G K A V V E M F G V Y D T D G E
UniRef90_R5RIP2           D F Y F D L I G M D D R N I D D L R E K A P S P W E K I R M T E Y C T R I P
UniRef90_UPI00035F579C    F R R F D L I I A M D Q G H L T A L Q R M V P Q P P G V V T L F L S Y D N P P M
UniRef90_A2U478           F D E F D F I Y A M D E S N Y Q N I V S L A R N S E D E K K V H L E S Q P N Q N
UniRef90_H7ELJ9           D E Y F D F I V C M D D E N V R H L A R I F G S D P E G K I H K L L E Y C G E A
UniRef90_N2AMG8           D D Y Y D Y L I G M E Q V N I R N M L R I L R D D P E H K V S R L L D F T G R P
UniRef90_D2AMD9           F D E Y D Y L I V A M D Q E N I D T M K E M F P N A D F K V S R M L E Y A P A I A
UniRef90_R5ENP9           A D Y A K Y D Y C M D S M N L R N V A R I C G D K D E K I Y R L L D F T D D K
UniRef90_Q0FQR7           F D R F D L I V A M D G D N L A N L E A M R P Q G G A Q L R L F T D Y A A S T G
UniRef90_R6B5E6           F D R F D T I V V M D N Y R A I T S M C Q A D K D V R V R M A D F H H R Q Y
UniRef90_I3ZX01           F D N F D E I Y A M D T D N Y N K L M D L A R N N K D Q Y K I E L I L N P G A N
UniRef90_A3CK24           F A D F D Y I I G M D E S N V R D L K R M A P E D F Q H K I Y Q F E         E
UniRef90_UPI00040B54A8    D F V F D Y I V G M D N F N M D N I Q S Y Q P D E V C F L Y R R F D P K E F P I
UniRef90_UPI0002197582    F D E A D V I I G M D Q Q N I V N L Q N M A R A D R N K I H L A Y E A L G Q Y
UniRef90_UPI00034CA436    F E K F D L I L A M D E N Y R D I L Y L D P A Y R D K V R M M C D F C T H H D
UniRef90_V6SB73           F D N F D Y I Y V M D I S N Y Q D V I A L A P S T E K V I M I L D E L F P G E N
UniRef90_F2BEE0           W Q R F D Y I V A M D N A N L A E L E K R F G R H P E K L F K L T D L I P E Q G
UniRef90_R9MP13           F D E A F Y D Y G M D W N L K N M W R I A G D D P L H L Y K L L E F A G S Y
UniRef90_UPI0004729DC2    F L S F D Y I L A M D Y A N L N E L L R R C P R A Q Q H V A L F A H Y S E L Y N
```

```
                                  130               140             150
UniRef90_D0I6U5         K E I P D P Y Y G G G F E R V L D L I E K A S D A V L D
UniRef90_E6J127         R S V P D P W Y T G D F D E T Y R L I L A G C Q K W L E R V K S E
UniRef90_F5T1N0         S D V P D P Y Y G G G F N H V F D L V A D A S K G F H D S V V
UniRef90_T1IH30         T I I R D P Y Y A E G F E A Y I Q C L R C C K A F L E K
UniRef90_R5JV20         Q S I A D P W Y T G D F R T T Y Q D I V E G C E G L L R H L
UniRef90_UPI0003637841  A E V P D P Y F G G G F D R V M E M I E A S V P G V L D W L R A H L G
UniRef90_A8YUG2         Q D V D D P Y Y T N D F D T A Y D E I Y K G C K A L V E K L V K E K D
UniRef90_W2UQ83         L E V P D P Y Y G G G F E N V F N M L N K A C D I L L E K L
UniRef90_J2KN49         S P V P D P Y Y G D G F E H V L D L V E D A C E G L M R H V E Q R L
UniRef90_UPI000476A84E  H E V P D P Y Y G G G F V H V M D L V E A A A D G L L E H I R T H R A L K A
UniRef90_UPI0003609937  Q D V P D P Y Y G G G F E E V Y S M V K R T C P P L L N Y I K S R
UniRef90_R5GYV0         G A I A D P W Y G E F E T T Y R D V C D G C E G L I N W L G R E
UniRef90_L0GU91         R E V P D P Y Y G D G F E R V F D M V E A A A E G L L A E I R R R Y
UniRef90_V9WI51         A D H P D P Y Y T R D F E G C L D L I E A A A A G L T K A L R
UniRef90_A4EXL2         M D H P D P Y Y T R D F E G C L D L I E A A A K G L R D S L
UniRef90_B4EDS9         T E V A D P Y F G G G F E Q V L D Q V E R A C A G L L E T L R A R
UniRef90_A0A059MP02     E S V P D P Y Y G D E F E L V R R Q I E A A I P G L L D W V R R Q
UniRef90_V9KKA5         D V I E D P Y Y G S D F E R V Y E Q C L R C C K A F L A
UniRef90_P41498         L I I E D P Y Y G S D F E V V Y Q Q C L R C C K A F L E K
UniRef90_I3YAX7         R D V P D P Y Y G G G F E R V F D L L E S A S R G L L A D L K T R
UniRef90_F0TEA8         D D V D D P W Y T N D F D T A Y Q E I Y K G C E G L I K K L K E D K
UniRef90_UPI0002C3D05F  S E V P D P Y Y S G G F Q K V I D M L E D G C K N L L D Q L E
UniRef90_UPI00041F9193  R D V P D P Y Y G G D F E H V L D L I E T G C D G L I A A L R E
UniRef90_D5CSQ5         R E V P D P Y F G D G F E H V D M V E D A A N G L L R H V R Q     H H L Q G
UniRef90_UPI0003657B1E  E S V A D P Y Y D D A F T T V R E Q I E S A M P G L V S W
UniRef90_B1KRA5         E E V P D P Y Y G D G F E R V L D L L E S S C E Q L I R Q I K
UniRef90_UPI0003B381FF  A E V D D P Y Y G D D F A Q A R A D I E A A L D G L V Q W V R E E L K
UniRef90_G4L342         K E I P D P W Y S G Q F E K T Y Q M L M E G M K P W L N R F K E
UniRef90_R5BRJ7         R D I A D P W Y T G D F D T T Y E D I R E G C Q S F W N Y L R R E G K
UniRef90_A4BE05         S T V P D P Y Y G G G F D D V L D L C E T L S Q D I I K S I V R
UniRef90_UPI000380BC64  A G V D D P Y Y G E G F S E T R T Q I E S A T P G I I E W V R S N K D
UniRef90_T1VQJ6         E S V P D P Y Y G E D F E L V R D Q I E A A I P D I L D W I R E R A
UniRef90_A2SI31         S E V P D P Y Y G G G F D H V L D L V E A A C D G L V E H L A R
UniRef90_A0A037ZKS0     T E V P D P Y Y E G E F D M V L D L I E D A S R G L L A S L S R
UniRef90_E0P1S8         R D V A D P W Y T G N F D V T Y R D V D A G C R A L L A E L G K
UniRef90_R6FRK5         D Y V P D P Y Y G E G F E Y V L D L L E D A C A G L L E D L K
UniRef90_D2ASG1         A E V P D P Y Y G E G F A D V L E M V R A A S E G L A E H L S R T L R
UniRef90_UPI000303CD3F  A D I F D P F G G E D Y R E V Y E Q I D E A I K Q L L V K L K
UniRef90_A0A023FH82     T I I R D P Y Y D D G F E D V Y V Q C L R C C K A F L D Q V
UniRef90_Q0KCH5         A D E P D P Y Y G D G F E K V L D Y I E D A C D G L V A E L R Q R L Q
UniRef90_UPI000309780A  Q E I P D P W Y S H N F A L T Y R Q L S E V L P Y W L D K V V
UniRef90_K0C590         K E V P D P Y Y G N G F E R V L D L I E D A C E G L M L E L E E K L
UniRef90_M1X240         K E V P D P Y Y G E G F D Q V I D L L V D G C R G L L E Y I L S Q G
UniRef90_F9VBB3         K S V P D P W Y T G D F E E T Y R L V K E G C L N I L E
UniRef90_W0DIG6         R E V P D P Y Y G E G F T Q V M D L V E D A A S G L L A H L Q E R H R
UniRef90_A6EB03         L E V T D P Y F D D Q F E P V F M Q I E E R C R Q L I E E I K A K S E L
UniRef90_A2QNG9         L H E R D P Y Y G G G F E E V Y Q Q V T R F S K S F L E Y L E K N Q R
UniRef90_F0EZN3         D H V P D P W Y T G N F V E T R E I I S A C C R E L L D R I S D Q
UniRef90_R6SRP8         T E I A D P W Y T G N F D A T Y D D V L E G C T G L L E H L K
UniRef90_F3NI13         L D V P D P Y Y G E G F E E V L S L I E A T V P G L L A H V R E R L D A E A
UniRef90_F5S9X9         D H V P D P W Y T G N F N E T R D I L T A C C Q E L L N R L
UniRef90_S2XXB3         L D V P D P Y Y G D G F E E C L E M V E A A S E G L L A A V R A H
UniRef90_UPI0002892FD7  V D V P D P Y Y S D A F D H V L G M I E K A C G S L F R Q I T
UniRef90_UPI0003EAB627  S E V P D P Y Y G G G F E K V L D L L E D A C E S L L D N I L A E
UniRef90_R5F6U5         V D C P D P Y Y G D G F E N V L N I L E D A C E G I I A
UniRef90_T2KMH3         Y D V P D P Y H G G G F E N V Y K M L D E A C D V I A D K L K
UniRef90_A0A031JM46     T D V T D P Y F G D G F D V T W D D V T R A A R A L V Q R L T
UniRef90_F2JIU5         R D I A D P W Y T G D F D R T Y E G C S E F L R F I L E E N K
UniRef90_Q8DHY3         K E V P D P Y Y G G G F E K V L D L L T D A C E G L L E Y L K A N Y
UniRef90_R6AV52         K S I S D P W Y S G R F D E T Y R D V S G C E G L L A Y L K E T G R I
UniRef90_R7ZU36         K D V P D P Y Y G E G F E N V Y Q I L D S Y I D Q F L S V L E N H P R V N G
UniRef90_A6LEA9         Y D H P D P Y Y A E G F E L V L D L L E D A C A G L L E Y C K D H L S
UniRef90_Q17G80         K I I R D P Y Y D E G F E Q C Y V Q C V R C C K G F L E K V E R
UniRef90_UPI000475C0FF  A E V P D P Y Y G E G F E E V L S L V E A A A E G V A K H V A D E
UniRef90_UPI0003EAD9B1  L I I K D P Y Y G E D F E T V Y E Q C L R C C K A F L E E
UniRef90_R6FNF3         G D I A D P W Y T G N F D A T Y E D V E K G C R G F L E F L N E R S
UniRef90_B5CS11         E D I A D P W Y T G N F D A T Y R D V K E G C E A L L D E
UniRef90_UPI0002891359  R D V P D P Y Y T G D F Q E T Y D L C I L G C K Q I L
UniRef90_R5W0A9         D Y V P D P Y Y E E G F E L V L D M L E D G C E G I L E Y L S E N G K
UniRef90_H1H9G0         L E V P D P Y F G D G F E H V F H L L D E V C N V I A K D L K
UniRef90_G7GPX1         L D L S D P Y Y G E D F A E T R I Q I E A A I P G L V D W
UniRef90_R5U568         Q D I A D P W Y T G N F D R T Y E D V K E G C E A L L Q
UniRef90_UPI00047B9ECC  Y D H P D P W Y T G N F V E T R D V L T R C C T A L A E A L Q Q G K R
UniRef90_F1LE52         A E V S D P Y Y E G A F E R V F E Q L T R C C T A F L D K
UniRef90_R5RIP2         A D H P D P Y Y G E G F E Y V L D I L E D A C A G L L T S L T Q D S
UniRef90_UPI00035F579C  L D V P D P Y Y G G G F E Y V L D L L I E N G C A G L L N Y L R Q R Y
UniRef90_A2U478         L S V P D P Y Y G D G F E N V Y Q M L D E A C T V I A S K L
UniRef90_H7ELJ9         R D V A D P W Y T G N F D E T F D D V M R G C T G L F G T I S E E S K
UniRef90_N2AMG8         R D I A D P W Y T G N F V T Y E D I L E G C E A L L Q
UniRef90_D2AMD9         D D V P D P Y F E N N F E K V F L M I D T A C Q G F F E K I R L E Y K L
UniRef90_R5ENP9         R D V A D P W Y T G N F D K T Y E D I M K G L D G F L E Y L
UniRef90_Q0FQR7         R E V P D P Y F T R D F D G T L D L I E I A A Q G L L D Q L S E
UniRef90_R6B5E6         T T V P D P Y Y G E G F E L V I T L L E D A C Q G L L Q S L T E
UniRef90_I3ZX01         K S V P D P Y Y G E D F E L V F E L L D K A T D V I I E K Y D Q E H K
UniRef90_A3CK24         E S V P D P W Y T G D F D Q T Y D L V L A G C K K W L E R L
UniRef90_UPI00040B54A8  P E V P D P W Y G E F E N V Y Q I V S R C A E E F L D F L V R N H E L
UniRef90_UPI0002197582  K V I E D P W Y D D H K F D R T Y Q Q L A E V L P A W L K I L L N Q
UniRef90_UPI00034CA436  Q E V P D P W Y G N F Q V I D L L F D A C D G L E V V
UniRef90_V6SB73         V D V P D P Y Y G G G F E H V F M L L N E A C E I I A E K L K A K H
UniRef90_F2BEE0         Y S H P D P W Y T G D F D E T Y R L V S A G C
UniRef90_R9MP13         R D I A D P W Y T G N F D V T Y K D I I E G C Q A L L N S L K S N
UniRef90_UPI0004729DC2  K E V P D P Y Y G E G F E H V L D M V E D A A S G
```

```
                     1                 10              20            30              40
UniRef90_X1HFN3                      N I L F V C T G N T C R S P M A E A I A R R L W Q G R I R D K M K
UniRef90_A3UII8              M P R Q T S I L F V C T G N I C R S P T A E A V A K A M A E R T G K E L V
UniRef90_M0RH00                  P F S V L F V C L G N I C R S P A A E A V F T D L V R K R G A E S F K
UniRef90_Q0URW6                  P V S V L F V C L G N I C R S T M S E G V F T S L A P S H P L I K S
UniRef90_K2QL17              M T R V L M V C L G N I C R S P L A E G I L K S K V D S D K V T
UniRef90_B5X7L5                  K S V L F V C L G N I C R S P I A E A V F R K M A T D A G V V D K W
UniRef90_G5JQC6              M K K I C F V C L G N I C R S P M A E F I M K S M V D P A E I Y
UniRef90_UPI00047B541A        D K I R I L F V C L G N I C R S P S A E A V M K A L V E K K G V S R F D
UniRef90_V6HHR8              F E S K I R V L F V C L G N I C R S P A A E G A F Q D L V Q R R G I E F F E
UniRef90_V9DEN1            A E S S D P K S V L F V C L G N I C R S P M A E G V F R S L T K S N P R V G
UniRef90_F0P2B9                  M K I M M V C L G N I C R S P L A E G I L Q H K L G N N Y T
UniRef90_UPI00037B3D3E           M K V A F V C L G N I C R S P M A E F V M K Q L A Q D H D H H L T
UniRef90_UPI000344DDB0    R S A G P Y R I S V V C L G N I C R S P M A E K V L T A D L D R A G I G K V D
UniRef90_B4U5G0                M K K V C F V C L G N I C R S P M A E F V M K S M A S P D E L Q
UniRef90_E6UVA2                    V L F I C T G N I C R S P T A H A L L L H K A R L A G V P V D
UniRef90_F2I6Q9              M I R I C F V C L G N I C R S P M A E A L M R E L V K K N H W E R V Q
UniRef90_D5V3R0                  M K I L F V C L G N I C R S P L A E A I A K D F A K Q N N Y K I E
UniRef90_X2HAC0                  T K V L F V C L G N I C R S P M A E Y I L R D L V T K K G L E Q I E
UniRef90_B4KBQ6                  K K I L M I C L G N I C R S P I A E T V M A E T L A K A K L D S V V
UniRef90_J2K0G4            M N A P F R I C T G N I C R S P M A E S V F R A H L A E D G L D G V E
UniRef90_R7E4J6            A S E P Y R V L F V C L G N I C R S P A A E I I F K K M V K E Q G L E S I E
UniRef90_UPI0002EC1160          K I S V L F V C L G N I C R S P A A E A L F K K I R E K E I E D R F L
UniRef90_W7V2B7              M L K I M F V C H G N I C R S P M A E F I M K K L A C E N G I D D I Y
UniRef90_UPI0002F2360F          K T R I L F V C L G N I C R S P T A E E I F R T Q V A R Q A L D S I E
UniRef90_A4QFV1                  P V E I V F V C T G N I C R S P M A E V I A K A K A E E A G L E D V I
UniRef90_S2W429                M Q K I L F V C T G N I C R S A M A E Q I A N Y L S G Q R G L D L E
UniRef90_L0SUE5                M K L L L V C L G N I C R S P M A E G A L R H H L E R S P L G Q V Q
UniRef90_J3CJ85                M K L L M V C L G N I C R S P L A E G I M K T K V P G H F F
UniRef90_UPI000416C2BD        M N K I L F V C H G N I C R S T M A E F V M K E L V R Q A G K E Q F F
UniRef90_Q13WY5                  V S I C F V C L G N I C R S P T A E G V M R R L V G E A R L E H I L
UniRef90_C5EQ90                  I N I L F V C H G N I C R S P M A L Y Y F Q D L V H K K G L E D F F
UniRef90_M1Z1N8          S K T I E L C F V C L G N I C R S P L A E G V F Q H L V N S Q K L E K I I
UniRef90_W4WLP4                        N S C R S P M A E A V F Q D Q I R K M D L D F W E
UniRef90_R6ZMP9              K K Q R I L F V C L G N I C R S S A E E I M R T L V R R A G R E K F E
UniRef90_W9YYX5          A S D K V S V L F V C L G N I C R S T M A E G V F R S L A K G H P R I H E
UniRef90_Q75G17          K S K N L I R V L F V C L G N I C R S P A A E G A F L D L I Q K R N L E S F L
UniRef90_D5ADS8                    V L F V C L G N I C R S P T A E A V F C D A V Q K R E L S A F K
UniRef90_Q9PB47                  M R V L V V C L G N I C R S P M G E A A L R H L I A I G K N E E I A
UniRef90_I0S3J5          M S D P R H I T F V C T G N I C R S P M A E K M F A H Q I G Q R G L H D V R
UniRef90_B4NH98                  M K I L F V C L G N T C R S P M A E S V M E H L I Q K H Q L H D W H
UniRef90_R6SZM9                M Q K I L F V C L G N I C R S P M A E Y I M K K M V N D A G R E G F E
UniRef90_F4CDK4                  M K I L V V C L G N I C R S P L A H G I L A H L V K E K G L D W E
UniRef90_K0YMD3                M H R I M F V C H G N I C R S T M A E F V M R D L V K R A G R E D F V
UniRef90_UPI000471D481          T S V L F V C L G N I C R S P T A E G V F R H L V Q C G Q E H A Y R
UniRef90_UPI000418A7BF    A S R T L H V C F V C S G N I C R S P M A A S I V S H A I A E A G L D R V R
UniRef90_I3XEE7              K P V R I L F V C L G N I C Q S P L A E G V M R A L A R R A Y G E A V S
UniRef90_K9XMD2                  Y K L L F V C L G N I C R S P S A E N I T N H L I Q E A G L G K I V
UniRef90_UPI0003617EFF          M K Q V L F V C L G N I C R S P M A E F V M K D L A K G Y D I R
UniRef90_E3QKS2          E Q P V S V L F V C L G N I C R S T M A E G V F R N I A P P Y K G L I A K
UniRef90_N1JE66                P I S V L F V C L G N I C R S P M A E G V F R S L V S Q N K N S I R V
UniRef90_H8KLR2                M K I L M V C L G N I C R S P M A E G I M R D L I R K N N L N W E
UniRef90_UPI0004621778          S V V V C L G N I C R S P I G E A V L K H V A K E R G V D I T
UniRef90_H3D3W6                  S V L F V C L G N I C R S P I A E A V F R K M A D M G V A D K W R
UniRef90_E9EDS7          M P E P V S V L F V C L G N I C R S T M A E G I F Q S L A P Q Y Q G K I G R
UniRef90_UPI00047E702B        M I K I L F V C H G S I C R S P M G A Y L L R D I A A R K G W G D I H
UniRef90_UPI0002EFFA3B    M P D R P A V L F V C L G N I C R S P L A E A A M R A E A S R V G L D L L
UniRef90_B0TQT1                    M F V C M G N I C R S P S A E A M F R L K A R A A Q L D I E
UniRef90_V2UWW7          K T P Y K V L C V C L G N I C R S P T A E A I L R H Y C D A H S L D I V
UniRef90_G9QJ95                M K V L F V C T G N T C R S P M A E A I L K K I N E Q I E V K S A G
UniRef90_R5QGM8                M I K V L F I C H G N I C R S P M A E F I M K E Q L R K L G L E E F Y
UniRef90_C4WRW0          M G E K R S V M F V C L G N I C R S P M A E A V F N E V V M Q R G L D K W Y
UniRef90_H2AYT9              K K I S V A F V C L G N I C R S P M A E A V F R H A V K Q Q N L E S Y K
UniRef90_F8NFV1                  V S V L I V C L G N I C R S P M G E A V L K E V A S K R G L D I T
UniRef90_S3ZQ17                V C F V C T G N I C R S P M A A S V L R A R V R D A G L D G V V
UniRef90_E8XSB2                  S V L V V C T G N I C R S P I A E R L L R R L L P D K K I D S A G
UniRef90_D2RK15                M I K I L F I C H G N I C R S T M A E F V M K E L V R R D H L D A Y E
UniRef90_F4QZL3                  S V L F V C H G N I C R S P L A E A A F R E E A R R I H L D A I T
UniRef90_H2IPG8                  S V L V V C T G N I C R S P L A E R L L R K L I P E K K I D S A G
UniRef90_R6BUW4                M I K V L F I C H G N I C R S T M S Q S V F T Y L V R Q A G L E D F E
UniRef90_UPI00036041EB          P T Q L L F V C L G N I C R S P T A E G V M R H L V T E A N L D H I A
UniRef90_S2ZI66                    H V T F V C T G N I C R S P M A E A L F N D Y L E H Q D E T R V R
UniRef90_E6MRY4                T K I L F I C L G N I C R S P A A H A V F Q Q K I N D K G L D R F E
UniRef90_D1R6X8                    L Y L V C L G N I C R S P A A E G I L R H L V K K Q G K E Q F H
UniRef90_UPI00037F60EE        M K K V C F V C L G N I C R S P M A E F V M K N L D E D G L R L Q
UniRef90_UPI000362A6CD          V K L L F V C L G N I C R S P M A E G A L R A R L A A S P L S R V S
UniRef90_B5YDB5                M K I V F V C S G N T C R S P M A E Y L F R D I V K K L N L S N I E
UniRef90_D7WWV9                M K I L F V C T G N T C R S P M A E A I L K H K H L N N V E
UniRef90_K9Q5K5                P Y K L L F V C L G N I C R S P S A E N I M R H L I D E A G L E Q I I
UniRef90_B2B851          M A E K I S V L F V C L G N I C R S T M A E G V F Q A M A K A E P Y K D A D
UniRef90_K9SJY3                  P Q K L L F V C L G N I C R S P S A E N I M N E L V A Q A G L E Q I I
UniRef90_I2ACL1                  P L H I T F V C T G N I C R S V M A E K M F A D Q L R R R G L D A V R
UniRef90_C5EXM0          M S K I E S I L F V C L G N I C R S P L A E G I A R D L A V A G L E L K
UniRef90_UPI00036A4259    M S D P E V L F V C W G N I C R S P M A E V V A K D W A H R E G L A H L T
UniRef90_U1FKU1          Y T D G M H R I L F I C H G N I C R S P M A E F V M K D L V R K A G R E D F V
UniRef90_R6R5E7                M Y K I L F V C H G N I C R S P M A E F V M K D I V A K A G K D E F V
UniRef90_N9CCG7          K T P Y K L C V C L G N I C R S P T A E I V L R H Y C D E A N L N V M
UniRef90_E6S629                P F H V T F V C S G N I C R S P M G H V I L E Q L V A E A G L D A V T
UniRef90_D5A360                  Y R L L F V C L G N I C R S P M N H L I E E A N L D R I V
UniRef90_F5T840                M L K I C F V C H G N I C R S P M A E F I F K K L L E N G R T E D F L
UniRef90_UPI0002558EDF        A T T K V L M V C L G N I C R S P L A E A V L K S K I Q N L D V V
UniRef90_UPI0002DD8714    M V A M I E I V T V C T G N I C R S P M A E A L L R R E I C A G L D A V S
UniRef90_F4L584                M R I L M V C L G N I C R S P L A E G I L R D K V K K A G L E W E
```

```
                                    50            60            70          80
UniRef90_X1HFN3          I H S A G T V A L   P G F R A S P L S T K M M K K R G I D I N L H R S T P T K T
UniRef90_A3UI8           L D S A G T G D W H V G E R P D P R A V K V A E A R G Y D L S G I T A R T D D D
UniRef90_M0RH00          I D S A G T I G F H E G N P A D P R M R A A A K R G I D V T S I S R P I R P S
UniRef90_Q0URW6          I D S C G T G A Y H V G S S P D R R T M S T L K S H G I T T Y R K R K F D A
UniRef90_K2QL17          V D S A G T A N Y H I G K G P D K R S I A T A A R Y K I D I T D Q R A R Q F T D
UniRef90_B5X7L5          V I D S G T T D W N T G S S P D A R G L A C L R T H G I E T K H R T R Q V T K D
UniRef90_G5JQC6          V E S R A T S S W E H G N P I H R G T Q A I F K Q Y G V P Y S K N K T S Q Q I D
UniRef90_UPI00047B541A   I D S A G V I G Y H E G N P A D A R M Q R H A K K R G Y N L T S I S R K P A V D
UniRef90_V6HHR8          I D S C G T S Q Y H I G E L P D F R I R Q T A R K R G I E L T H R A R Q F K R D
UniRef90_V9DEN1          V D S A G T G A Y H T L D P P D Y R T I K T L R K H G I T D Y E H G A R Q V H D
UniRef90_F0P2B9          V E S S G T A R W H E G K K P D Q R S L A V A K K H G I D L S Q H Q A Q Q F I M
UniRef90_UPI00037B3D3E   V V S R A T S S W E H G N P I H Q G T Q D T L N R Y G V P Y D T H K T S Q Q I S
UniRef90_UPI000344DDB0   V E S A G T G S W H I G S G M D E R A A A T L R V H G Y P T D H V A R R F P R R
UniRef90_B4U5G0          V E S R A T S G W E H G N P I H H G T Q S L L Q Q Y Q I S Y D T K K T S Q Q I T
UniRef90_E6UVA2          V D S A I S D E E R G N P P D P R S V A E A R R G I E M H A H C A R Q V R N
UniRef90_F2I6Q9          V E S A A I S D E E I G N G V H P G S R Q I L E R E G I S W E D L I S S P L T E
UniRef90_D5V3R0          V D S C G T G S W H I G E A P C L D S Q K I A K I K G L D I S N Y K A R Q V Q K
UniRef90_X2HAC0          I A S A G T S G W H N G E D M H S G T K E I L H A K Q I S T N D F Q S R P E D I
UniRef90_B4KBQ6          V D S A A T G S W H V G N R A D P R A L S T L Q K H G L E S K H I V R Q I T K Q
UniRef90_J2K0G4          V D S A G T G G W H E G D G A D P R T V A V L R A G G Y A H A H T A R Q F R S W
UniRef90_R7E4J6          S D S A G M I G Y H R G C P P D A R M V Q A L E K Y G Y Q N P G V K S R P V R K
UniRef90_UPI0002EC1160   V D S A G T G S W H V G K K S D S R M R E A A K N R K I D I I S T A R Q I K N D
UniRef90_W7V2B7          I A S C A V S S E E L G N P V Y P P A R A E L A K H G I S C S G K S A V Q R S D
UniRef90_UPI0002F2360F   A D S A G T Y S G H A G N L P D P R M R A A A R R G Y E L T H R A R P L R E D
UniRef90_A4QFV1          F S S C G M G N W H V G Q P A D K R A L A E L K S A G Y N G D T H R A Q L G P E
UniRef90_S2W429          F D S A G V S D E E H G N P M D S R A V R V M K Q H G Y P V S P H Q A K Q R R M
UniRef90_L0SUE5          V D S A G T G D W H S G E A P D R R A I A C A R G H G V D I A W L R A R Q L Q D
UniRef90_J3CJ85          V D S V G T I S M H E G E H P D K R A I K T A A N H G I D L S K Q K S R P I T K
UniRef90_UPI000416C2BD   I I D S K A C R T D E I G N D T H K G T K S A L Q A H G I P F T K R K A R Q I Q R
UniRef90_Q13WY5          I D S A G T G D W H I G Q P P D E R A Q Y A A G R R G Y E L A A L R G R Q I A D
UniRef90_C5EQ90          L D S A A T S T E E I G N S A H R G T R E K L R Q A G I S C Q G H Q A K Q M K P
UniRef90_M1Z1N8          I D S A G T G N W H A G S P P D R R M E S T A R K K G V R L A S I A Q Q Q P G D
UniRef90_W4WLP4          V E S A A L L S Y H V G N D P E P R A T A T L Q K A G I T D Y S H I A R K I N D
UniRef90_R6ZMP9          I D S A G I I G F H E G E L P D A R M R A H A I R R G Y E L T H R S R P V R T D
UniRef90_W9YYX5          I D S A G T G A Y H I L D P P D Y R T M A T L R K H G I T D Y E H G A R Q D Y I
UniRef90_Q75G17          V D S C G T S R Y H I G E L P D P R T R Q A A R K R G I E L T H R A R Q F R R D
UniRef90_D5ADS8          I D S A G T I D Y H E G N L A D P R M K N A A K K R G I E I T S I S R P I S P T
UniRef90_Q9PB47          V D S A G T G H W H I G Q P P D A R A I H C A H S H G I D L S T L R A R Q V H H
UniRef90_I0S3J5          V T S A G T G N W H V G K C V D E R A A R V L R A H G Y P T D H C A A Q V D A D
UniRef90_B4NH98          T D S A G L R D W N V G R E P Q G R A Q H L L Q Q H G L K S R H L S R L I T S Q
UniRef90_R6SZM9          I S S A A T S D E V V G Y D I Y P P A K D C L R L H N I P F E K R G A R Q V T Q
UniRef90_F4CDK4          I D S A G T G D W H V G E C P D R R S I A I A K K Y G V D I S G Q R A R Q F N R
UniRef90_K0YMD3          I S S S A T S R E E I G N D T H P G T K R A L M A H G V P F S P R A A V Q L R D
UniRef90_UPI000471D481   I D S C G T G A Y H V G E P P D R R A R Q E A Q R R G L S L D R L R A R E Q R D
UniRef90_UPI000418A7BF   I T S A G T G G W H I G E P A D N R A R T E L L A H G Y S D R H V A A A Q L S P D
UniRef90_I3XEE7          V D S A G L G A W H I G H L P D R R S I E A A K A H G I D I T D L R G R Q I A T
UniRef90_K9XMD2          C D S A G T S S Y H I G S P P D R R M T A A A T K R G I K L Q G R A R Q Q P L D
UniRef90_UPI0003617EFF   V E S R A T S N W E H G N P I H P D T Q R I F K R H A I A F D R Q K R S Q Q I D
UniRef90_E3QKS2          V D S C G T A A Y H V G D P P D S R T M A T L E D H G I T D Y R H A G R K P S D
UniRef90_N1JE66          I D S C G T G G Y H V G C S P D S R T M S T L R N N G I L D Y Q H A A R K I R D
UniRef90_H8KLR2          V D S C G T G S W H I G E A P D K R A Q R T A Q S F G V D I T S L R A R Q F S D
UniRef90_UPI0004621778   V D S A G T S N Y H I G E D P D D R S V A I C R K F K V P I Q H A A R Q Q S E D
UniRef90_H3D3W6          I D S A A T S T Y E I G N A P D D R G Q A C M R R H G V A M S H T A R Q V T K D
UniRef90_E9EDS7          I D S C G T A A Y H A G E D P D S R T M S T L E A N G I T D Y E H A A R F K D
UniRef90_UPI00047E702B   I E S A A T S A E E I G N P V Y P P I R K I L E S H G I N C S G Y K A R R L K A
UniRef90_UPI0002EFFA3B   V D S A G T G H W H V G K A P D R R A Q A V A A R N G I D I S G Y R A R Q R E D
UniRef90_B0TQT1          I D S A G T I A Y H Q G H S P D K R S I A A G V K R G L S F D G M R A R Q Q T D
UniRef90_V2UWW7          V D S A G T S N Y H P N K A P D L R S Q K H A I K R G Y D L S T L R A R Q I N D
UniRef90_G9QJ95          I F A A D G A G M S V       N A Q T V L K E K N I P C S H Q S R T L T K E
UniRef90_R5QGM8          V A S A A T S S E E V G N P V Y P P A R A E L A K H G I S C G Q K R A V Q L V K
UniRef90_C4WRW0          A E S S G T G G W H V G C S P D H R T M S V L K I N G I K Y K H S A Q K F N L E
UniRef90_H2AYT9          I D S F G T A G Y H V G G D P D R R S A A T C K K H V P V N H K A Q Q R P R H
UniRef90_F8NFV1          V D S A G T A G Y H V G E D P D E R T I A T C R K F K V P I N H S S R Q V N K A
UniRef90_S3ZQ17          V D S A G T D G W H E G D G A D P R T V A V L E A A G F D T D H L A R H F R D W
UniRef90_E8XSB2          M A A L       V G H S A D E G A I V T A G K H Q L L L D N H R A T Q F T S
UniRef90_D2RK15          I A S A A T S R E E I G N D T H W G T K E Q L E L H H I P Y T S R K A R Q M T R
UniRef90_F4QZL3          D S A G T G G W H V D S P P D R A Q A V A L K N G V D I S A L R G R Q V K P
UniRef90_H2IPG8          I A A L       V D H E A D A S A I A V A Q E H G V S L D G H K G T Q F K S
UniRef90_R6BUW4          I D S A A T S R E E I G N P P H Y G T R N K L R Q M Q I P L I A H H A R Q M Q D
UniRef90_UPI00036041EB   C D S A G T S S Y H I G S P P D R R M Q Q A A L H L S G R A R Q F D K D
UniRef90_S2ZI66          V T S C G I G D W H V G Q H A D M R A L V E L K K A G I D G S Y L R A Q V G E E
UniRef90_E6MRY4          V D S A G I G N W H V G Q L P D S R M R R Q G E R R G Y M I N H K A R Q T S D
UniRef90_D1R6X8          I E S C G V G D W H I G R L P D D R M R D S A K N R G V V L S T R A Q F K R E F
UniRef90_UPI00037F60EE   V V S R A T S G W E H G N P I H T G T R R I F Q K H K I A Y S S Q K R S Q Q Q D
UniRef90_UPI000362A6CD   V D S A G T G D W H V G E P P D R R A I A C A A R H G V D I A G L R A R Q A R V D
UniRef90_B5YDB5          V T S A G I F T Y E G R E P S Y L S V K V M I E R G I D I S S H R S R K L T F
UniRef90_D7WWV9          V R S A G I Y A M P N A Q M S A H A Q Q V L N E A Q M S H E H F A T Q L S Q A
UniRef90_K9Q5K5          C D S A G T S S Y H V G S A P D R R M Q S A A R K K G I K L L G Q S R Q F S R D
UniRef90_B2B851          I D S C G T G A Y H I G E G P D R T M S T L E S H G I T D Y H A A R K V N D
UniRef90_K9SJY3          C D S A G T G A Y H V G E P P D R R M S Y A A S Q R G L Q L K G R A R Q V V D D
UniRef90_I2ACL1          V S S A G T G N W H V G E C A D E R A A G V L R A H G Y P T E H R A A A Q V D A E
UniRef90_C5EXM0          I D S A G T S G W H I D E P P C A N S I A I A R K Y G I D L S S L R G R K V Y G
UniRef90_UPI00036A4259   F T S A G V S N E E A G N P M D P R A T L T A A G Y N P H A R T A R L V T R
UniRef90_U1FKU1          I E S A A T S E E I G N D I H R G T R K K L D D M G V A H E A R S A R R I V R
UniRef90_R6R5E7          I A S C A T S T E E I G N P V H Y G T K R K L A E V G I S C D K K R A V Q K S D
UniRef90_N9CCG7          I D S A G T S N Y H P N K A P D S R S Q L H A K Q R G Y D L S A L R A R Q H R D
UniRef90_E6S629          V S S S G T G D W H V G E R A D P R T V D V L A H G D G S G H R A R E F D A
UniRef90_D5A360          C D S A G T S S Y H I G S V P D S R M T M A A K K R G I V L K G S A R Q F T S D
UniRef90_F5T840          V V S K A T S T E E I G N P V Y P P V R E I L E R L G I D C S R K R A C Q L Q K
UniRef90_UPI0002558EDF   V D S A G T G A Y H V G N L P D A R S I A A A K K R G I D I T D Q R A R K F D D
UniRef90_UPI0002DD8714   V G S A G V S D E E H G N P V D P R A G A V L A D N G I D L P E H S A H R V T D
UniRef90_F4L584          V D S A G I G D W H A G E L P D Q R S I A I A R R F G I D I T D Q R A R Q I R K
```

```
                                         90              100             110             120
UniRef90_X1HFN3          V E E A D L I L V M E Q E H R K Q I L H T S P S A E G K V F L L K Y F A L G I E
UniRef90_A3UII8          F I R F D H L I A M D E G H R R W L G R Q L P E T K I S L L M D W S   V G L A R
UniRef90_M0RH00          D F W F D L I L A M D M R N R E D I L S A Y G D A S K K V K L M C S F C K H N E
UniRef90_Q0URW6          R K D F D E F E Y I L A M D A N E I K R G G E E G V G K V M L F G F G G G K K G
UniRef90_K2QL17          F D K F D Y I F A M D R S N Y N D I V S L A K N T S D K V T L M L E L N N P Q A
UniRef90_B5X7L5          F M S F D Y I L C M D E S N L S D L K K K A K N S K A K I E L L G S Y D P E K Q
UniRef90_G5JQC6          I E V F D F V I G M D Q Q N I K D L R A L F P Q A P A S K I Q F F         I I E
UniRef90_UPI00047B541A   F N N F D I I I G M D D Q N I R D L L Y M A P D A R N K I Y K M T S F A G D S Q
UniRef90_V6HHR8          F E D F D F V L A M D R S N L R D L L T A G E E E R K K V H L F R K F Q K G E V
UniRef90_V9DEN1          F E E F D Y I F A M D A Y N F S D L Q R L Q R R A E S K V M M F G D F G G K K G
UniRef90_F0P2B9          F S D F D M I F A M D R N F A D L Q K L E E K D K I R L I L S E A F Q E Q
UniRef90_UPI00037B3D3E   E D Y D V V I G M D D Q N V I D L K K L S A G R Y D D K I F L F C D
UniRef90_UPI000344DDB0   F D E F D L V L A M D T D N L D D L H R A A P D E Q A R L F R S F A P G T G P H
UniRef90_B4U5G0          S L D F E A F D Y I I G M D S H N I R D L K Q M S K H Q W D S K I H L F       I E
UniRef90_E6UVA2          F E R F D W I V G M T A Q H C A A L R R L A P G T A H K V H L L T E F S E D D E
UniRef90_F2I6Q9          D I I Q E A D L L I G M D D Q N I A D I K R L G A D P K K V F R L M D F T D Q G
UniRef90_D5V3R0          E D   F K K F D L I V G L D S K N I A S L K N L G C Q N P L L I G D F   G Y E G
UniRef90_X2HAC0          A I Y D H I I A M D D K N L Q D L S R I F G C S R P D K V Y K I T D L L P D S E
UniRef90_B4KBQ6          D F Y F D Y I F G M D E D N M S D L R R L A P K D C K A E L L M L G D F G K E K
UniRef90_J2K0G4          F D R L D L V I A L D S G H L R A L R S L A P G P G E F P G L L S D S G L T G D
UniRef90_R7E4J6          D D Q F D L V V G M D R E N L R D L K Q L D K R G Q W I V P M C F F T T R F L D
UniRef90_UPI0002EC1160   F Q Q F N Y I L T M D D S N Y N N V M R E P Y S D L C E V R K I Q E F S N F H E
UniRef90_W7V2B7          Y D S Y D Y F I G M D T S N I R G M N R I F G S D P E E K I Y K L L T F A G R S
UniRef90_UPI0002F2360F   F E R F D R I V V M D D N N Y E T A H R L A P E L A G K I H R M T E F C R H Q W
UniRef90_A4QFV1          H M R A D L F V A L D S G H A G E L A A T G P N D K I R L M R S F D P E S N P T
UniRef90_S2W429          L D E A D L A I G F T N A H V S R M K R I A P D A N I R L M T D F D P E A V P G
UniRef90_L0SUE5          F A D F D W I L C A D A S N L R D V R R R A P A A L Q R V A L W L P W A G L D G
UniRef90_J3CJ85          E D V F D K I Y C M D I D V Y E D V I S K A K E Q R Q K I S L F L E L G D H K N
UniRef90_UPI000416C2BD   A D Y F D Y I I A M D E E N M R D L H R L T G G D P Q G K C H L L L T F A G E E
UniRef90_Q13WY5          F E R F D L L I A M D D K N V A A L R Q V C P E Q R D K I R L L M E F V P E T E
UniRef90_C5EQ90          R D Y F D Y L I G M D D W N I R N M T R I T G G D P D N K I H K L L E F A G S S
UniRef90_M1Z1N8          F R R Y D L V I A M D R S N L Q S L E Y M C A E K K L L F R S F D P Q A N G D
UniRef90_W4WLP4          F Y K F D W I F G M D E Y I I E L L Y E K Q P D S Q A K I E L L G K Y D P S G I
UniRef90_R6ZMP9          F Y H F D W I L G M D D R N I D A L R E K A P D S E Q K I H R M T E F C R T K V
UniRef90_W9YYX5          L A M D A Y N L R D L Q R L R R R V E S K G Q K P K A Q V M L F G E F S G G K A
UniRef90_Q75G17          F R E F D Y I L T M D K S N Q K D V L S L A S S D E E Q L F R F Q K D S K K D
UniRef90_D5ADS8          D F K F D L I L A M D K Q N K A D I L K A F D D A N K K V K L M C S Y C K Q C E
UniRef90_Q9PB47          F E R F E W L L C A D A S N Q R D L L R L A P E T A H K I V L W L P W A G I T E
UniRef90_I0S3J5          H L A A D L L V A L G R N H A R L L Q Q W G V D A A R I R M L F D P R S G G Y A
UniRef90_B4NH98          D F Y F D Y I L G M D S E N L K E L Q Q M A P Q P H C K I L L L G S F L E R K E
UniRef90_R6SZM9          A D H Y D L I F T M D R D N Q Q C M K R M F R D D E G K I R M L M S L A G K D Q
UniRef90_F4CDK4          F E Y Y D K I L V M D R N N L R D V M A H S P A D R A K V S L F L E       N
UniRef90_K0YMD3          Y D G F D L F V G M D S A N I R N M R R M G G D P L S K V H K L L E F S E G V A
UniRef90_UPI000471D481   F E C F D Y L V A M D D A N Y R D L K N A A P Q F H G H I V K L L D F A A E Y G
UniRef90_UPI000418A7BF   H L S A D L L I V A D T G H V A E L E R K R L G S R V R L L R S F D P A   A D G
UniRef90_I3XEE7          V D D F D L I G M D R R N V A E L Q R L A S E T M H K V H L F M K F A A G R N
UniRef90_K9XMD2          F E K F D L I L A M D K Q N Y Q D I L D R Q D Q Y Q D K V R L I C D F A T S Y D
UniRef90_UPI0003617EFF   L E V F D L I I G M D D E N V A D L Q R L S Q G K Y D D K I V I F       R K
UniRef90_E3QKS2          F N K F D Y I F A M D R S N L R D L Q R G N P D S K A K V M L F G E F S G G R R
UniRef90_N1JE66          F E K F D Y I F A M D R S N L E D L Q A L Q K D A R G K A R L M L F G E Y G S P
UniRef90_H8KLR2          F N E F D R I Y V M D T S N H Q N V L K M A P D E Q S R Q L L L N S C M P G E N
UniRef90_UPI0004621778   F S R F T H I L A A D E A N L R N L E R V R P G A T A E V R L W G A Y L D   D
UniRef90_H3D3W6          D F V T F E Y I L C Q R S R R S D L K K K A K S V K N C I E L L G L Y D P Q K Q
UniRef90_E9EDS7          F E V F D Y I F A M D R S N L Q R L H P D T K A K V M L F G E F S G T G K
UniRef90_UPI00047E702B   D E Y W D W D Y I F D E E N M R E T K K I W G S D L G H K I H F I K S Y S G K E
UniRef90_UPI0002EFFA3B   F S H F T H V V A L D H D N L A R L L A L R P G A G A E V S L L L D H V P G R A
UniRef90_B0TQT1          F V D F D L I L A A D E Q N L Q D L K R I C P K Y Q S K L V L L D F C D F I Y
UniRef90_V2UWW7          F V E F D L M L A M D H E N F E N I Q V L M S K A V R Q I A L M S E H D P R F Q
UniRef90_G9QJ95          D E W A D Y I F T M T T S H K N Y I M Q M F P K A A D K T F S I K E F V L G R H
UniRef90_R5QGM8          E D Y E K Y D Y M E Q M N I R N M M R I L G S D P D H K V Y R L L D F T D E P G
UniRef90_C4WRW0          D N K F D F V F G M D K S N V D C I N R K K P S Y N T K I F L L G S F D P E G K
UniRef90_H2AYT9          F E E F D Y I I C M D E S N L R N L R N L R N S R G E I Y L F G S W N N R F N
UniRef90_F8NFV1          D F R F S Y I L A A D E S N L R N L D S I K P D A T A D V K L W G S Y L D   N
UniRef90_S3ZQ17          F A R L D L V I A L D R G H Q R S L R R L A P T P K V R L L R S Y D P M A Y G D
UniRef90_E8XSB2          A R Q Y D L I L V M E K L H Q E Q I S R I S P E A R G K I M L L G H W L G   Q
UniRef90_D2RK15          E D Y G Y Y D I G F D D E N L R E I R R I A G D P D R K I H L L L D F T D   H P
UniRef90_F4QZL3          F R R F T H L V A M D H D N L A N L R R L A P D A T A Q L S L L L D H E G R A G
UniRef90_H2IPG8          S R K Y D L I L V M E K S H I E F I S G V S P E A R G K V F L L G Y W   L E Q
UniRef90_R6BUW4          Y E N F D F L I G M D S A N I R N M T R I G G D E E H K I Y K M L S F A D Y E A
UniRef90_UPI00036041EB   F E Q F D L I L A M D R E N Y R D I L R W D V D Y A E K V E P I C S Y C S H Y D
UniRef90_S2ZI66          H L A A D L I V A L A A N H V R S L A A L G A D A K I R L L R S F D P K A P R G
UniRef90_E6MRY4          F K L F D R I V V M D N D N Y R I I V S K A D E E A Q K V I R M A D F F H P R A
UniRef90_D1R6X8          F D Q F D Y I F V A D Q E I L H V L Y Q H A P E H K A K I H L M T V Y K C Y P N
UniRef90_UPI00037F60EE   L E T F D F I V G M D K Q N V A D L K R L S N G L Y D R K I F L F       A E
UniRef90_UPI000362A6CD   F D R F D H V F C A D A N N L R D A A R L V G A A G Q A R L S L W L P W A G I E
UniRef90_B5YDB5          D K E A S L I Y T M T K D Q L F V L G E M Y P E F K N K I L T L G E
UniRef90_D7WWV9          E M W A D L V L T M T T A H K D T I I S N Y P E A E H K V F T L K E Y T N E G S
UniRef90_K9Q5K5          F Q D F D L I L A M D N D N Y R N I L S R K D E Y G D K V K M M C D Y E N F R D
UniRef90_B2B851          F D K F D Y I F A M D R A N L S D L Q R I Q Q N N K A K V M L F G E Y S G T G K
UniRef90_K9SJY3          F E S F D R I F A M D R S N Y Q N I L R L D P Q Y K D K V E L I C S Y C S E H N
UniRef90_I2ACL1          H L A A D L V V A L D R N H A R M L R H G A D E D R V K M L R S F D P R T G A H
UniRef90_C5EXM0          D D V F D W I V A M D K Q N Y H D L L K M   G F D E S K V K F I G D F G L E G
UniRef90_UPI00036A4259   D E V A A M V I G M E R T H L R R I R Q L D P E A G A Y L L T F D P N S I P G
UniRef90_U1FKU1          S D Y Y D F L I G M D A N I L Y Y M R K T F G E D R E H K M S K L L E W C G V H
UniRef90_R6R5E7          Y D R Y D Y I I A M D E M N I R N I M R I I R S D P E N K V S L L L S H A G I D
UniRef90_N9CCG7          F V E F D L I L A M D Y E N L E N I Q Q L M R Q A Q Q E F L M S Q H D P D Y P Q
UniRef90_E6S629          F D D I D L V L A S D D G H V R L R D P H R S R I R L V R E F D P T A V
UniRef90_D5A360          F E N F D L I L A M D R N Y Q Q I L D R G K K Y G D K V K L M C D F C R H H N
UniRef90_F5T840          E D Y Y D Y F I G M D E R N R E N M K R I F G G D S E G K V S L L G D Y T D R P
UniRef90_UPI0002558EDF   F D T F D F I Y V M D K A N Y Q N V I R L A K Q K S K K V K M L M D E V D L K G
UniRef90_UPI0002DD8714   R E L A E A D L A M T A E H A R R L R Q R L P H P D T V R L L R S F D P H T D
UniRef90_F4L584          E D D F D L I L A M D D S N L R Q V H L L A K Q L S Q T K M L M N Y S E F P G K N
```

```
                                1         10         20         30         40
UniRef90_UPI0003B37A89          M F R I M I V C T G N I C R S P M A E Y M L K D A L V N A D V N E V Q
UniRef90_UPI000474F965              R I L F V C T G N I C R S P T A V A V M R V F L K R A G L E Q V T
UniRef90_E4QC83                 K K K I L F V C T G N T C R S P M A E H L L K E K L K K M N I D D I E
UniRef90_UPI0003756501      M P K P I C V L F V C L G N I C R S P L A E I I V Q G Q A E K K G V E Q F I
UniRef90_U2XP81                 P F R V M F V C T G N I C R S P M A D V V F R W F I D Q S G L D R V V
UniRef90_R5AWT8               K K P I R I F V C L G N I C R S P A A E G V M R A L V E E R G I A G W D
UniRef90_E6WLJ9             M S M F D S I L V I C T G N I C R S P I A E R V L R Q A F P G K K I D S A G
UniRef90_A0A026X1Z0         M T H K K V L M V C L G N S C R S P M A E A V F Q N Q V R E M G L S D F W
UniRef90_S8AM28             A Q R P V N V L F V C L G N I C R S T M A E G V F R N V A Q T H D L I G K
UniRef90_UPI000258DDB8      M P Q K K V L M V C L G N S C R S P I A E A V F N V Q L E K L N L D F W E
UniRef90_N9BSR1                 P F K V L C V C L G N I C R S P T A E I V L R H F C D T Y Q L N V V
UniRef90_U5DBL3         R A S V A Y K L L F V C L G N I C R S P S A E N I M N H A I A E A G L E R I V
UniRef90_R7D896                    R V L F V C H G N I C R S T M A E S V F T E L V H Q A R S D E F V
UniRef90_A3XM92                 K T H I L M V C L G N I C R S P L A E G L L K S K L D A E R F Q
UniRef90_E6ZZD0             D K I N V L F C L G N I C R S P M A L A V F E H T A V Q A G V R D R T
UniRef90_UPI0004753DA3        M K K I L M C C M G N I C R S P T A E G V L R A K L E A S G L D R V E
UniRef90_UPI000331773D                 T G N I C R S P I A E A V F R K L A T D Q N L D K W V
UniRef90_UPI00036D7FAB        M K K V C F V C L G N I C R S T M A E F V M K T M L A G E D I A
UniRef90_B9A1Q6             E P Q I K A L V V C L G N I C R S P M G E A V L K D I A T K R G M D V H
UniRef90_G0LCU2                  T K V L M V C L G N I C R S P L A E G I L Q S K V D P K K V F
UniRef90_U2UBK3                  K I L F V C Y G N I C R S T M A Q Y V M Q D L V E K A G L S D F F
UniRef90_G0VQ14                 I R I L F I C H G N I C R S P M A E F V F R Q M A E Q E M A D R F D
UniRef90_Q06B99                   N I L V V C V G N I C R S P I G E R L L K Q Q L P H K N I A S A G
UniRef90_L1MSP0                 M K I L F I C L G N I C R S P L A E E V F R Q K V K S R V A D F P T
UniRef90_R5ZM48             M Q R V L F I C H G N I C R S T M A E S V F T E L V R R A G R E E F A
UniRef90_L1NHX6           K K K I A L L F V C L G N I C R S P A A E G V M K Q L V K N K G L E Q F E
UniRef90_F2N2H4                  K N I L I V C V G N I C R S P T A E A L F A H R L S G Q G L T
UniRef90_M2XE02             M Y R I A V V C L G N I C R S P L A E R E L D R A G L S S V A
UniRef90_V9HPY5             M I R V M F V C H G N I C R S T M A Q C V F A D M V Q K R N I D N F I
UniRef90_UPI0004791949     M S A L R I L F V C L G N I C R S P L V E G V A R R R C A E A G L A V E
UniRef90_UPI0004168C86         M E N I L F V C T G N T C R S P M A E A L L R H H G N E L Y
UniRef90_G8RMU0                 P L H T F I C S G N I C R S P M A E K M F A H Q I S E R G L D A V R
UniRef90_J9GVF4               M K S I L F V C L G N I C R S C T A E E I F R V K A T Q A K V E Q F D
UniRef90_W6MFE0               K F S V A F V C M G N I C R S P M A E A V F N K T V S D L G Y S D S K
UniRef90_UPI00047B2E6D        M T N V L F V C T G N I C R S P M A E A I L R S K A L P G V E
UniRef90_UPI0003B3F766         M R I M T V C L G N I C R S P A A E A V L A R R L E A G L T D V T
UniRef90_N8TH58           M S S K M K V C V C L G N I C R S P T A E V V L R H Y C D E K R L N V V
UniRef90_W7TSN9     A P A S A A K S V L F V C L G N I C R S P T A E A V F K S V V E R E G K S S H G
UniRef90_W9AVB6         M S S R L H V T F I C S G N I C R S P M A E K M F A H Q I G E R G L D V V R
UniRef90_R7HRG8            K K Y K I L F V C L G N I C R S P A G Q G V M E R I V D E R G L D R I F
UniRef90_UPI0003B3DCF5             R I L F V C L G N I C R S P L A E I A L R E E T T R R G L D I V Q
UniRef90_F5XIY6         A T D L R S I V F V C W G N I C R S P M A E R V A E K L A A D R E M E D L V
UniRef90_UPI0003061212         M K R V L F V C T G N T C R S P M A E A L L R H Y G K G K F E
UniRef90_A5V4K2         S R P P R I L F V C L G N I C R S P L A E A A M R A A A E R E D I P V E
UniRef90_X5M101           E P L L H V T F V C S G N I C R S P M A E K M F A H Q I S E R G L D L V R
UniRef90_M7N6Z0                   M V C L G N I C R S P L A E G I L K S K L P Q E S F F
UniRef90_B5IPL1                 L F V C L G N I C R S P A A E G V F L H L V A Q Q R L D Q F L
UniRef90_UPI000255EDE0         M H L M T V C L G N I C R S P A A E A V L V H R L R E A G L D D V T
UniRef90_G8YDI1          K K L S V A F V C L G N I C R S P A A E A V F E H K V N E L G Y S S Y R
UniRef90_H8GVA9                     L C L G N I C R S P V A E A L L R R E L A A A G V E A T
UniRef90_Q17FY5              M R I L F V C I G N S C R S P M A E A V M R D M L L R E N L D W T
UniRef90_J8PY35            E P K I S V A F I C L G N F C R S P M A E A I F K H E V E K A G L E D R K
UniRef90_UPI0004288874            R I L V V C T G N I C R S P V A E A M L R R H A P E R S I G S A G
UniRef90_UPI0004675835         Y R V W F V C T G N T C R S P M A E H V F R R H V E E A G L G G V V
UniRef90_V2TYU6         T Y K E P Y R I L C V C L G N I C R S P T A E V V L R H H V E K N N L K I I
UniRef90_M4WW04                    R I L F V C V G N I C R S P T A E H L L R E S L P G S G I
UniRef90_UPI0003B42B41       M P D I L F V C L G N I C R S P L M E G L V R A H W T T R R P D T R
UniRef90_X5G3K6                   K I L V V C V G N I C R S P T A E R L L K H Y Q P E L T V D S A G
UniRef90_D8GKY7              M K N I L F V C T G N T C R S C M A E A I F N Y L C D I E H I K
UniRef90_UPI00034AB341     G P Y R V S V V C L G N I C R S P M A E K V L T A D L E R A M N D L V R
UniRef90_B2VY49           K P V S V L F V C L G N I C R S T M A E G V F Q S L T S P S H P L I T T
UniRef90_I8HZN2                   N I L V V C T G N I C R S P I G E Y L L K A R L P N S K
UniRef90_F6D165                 I R V L T V C L G N I C R S P A A Q G I L Q H E A E L K G L N L S
UniRef90_D8LN75              K T R V L F V C L G N I C R S P T A E A V F K Q V T S K A D A D K F E
UniRef90_UPI00046D67B3     K K K V L F L C T G N S C R S Q M A E G W L R H L A G D R Y E
UniRef90_D7AWC6         G P Y R V S V V C L G N I C R S P M A E K I L A A D L E R A G M S D V A
UniRef90_A6AQ25                   N I L V V C V G N I C R S P T G E L L Q S L L P N K K V A S A G
UniRef90_R7HAT6               M I K I L F I C H G N I C R S P M S E F V L K D M V E Q R G L E Q F E
UniRef90_UPI000306C81A            S I L F V C L G N I C R S P L A D G A L R H A V R Q R D L G W T
UniRef90_K0NDP9         M S E K L L F L C S G N S C R S Q M A E G W A R H L K A N L I D
UniRef90_Q21SY4         M S T Y S I L L V C T D N L C R S P T A E V L R Q K A I Q G L D Q V R
UniRef90_W4Q763              M K K V L F V C T G N T C R S P M A E A L L R S K F G E T V Q
UniRef90_Q8RD95               M R V L F V C T G N T C R S P M A E G I F N A K S K A L G K D W E
UniRef90_D9S1S1              M K K I G F I C T G N S A R S Q M A E G F G R Y F A A K L G K Q V E
UniRef90_B6QEN1           A P V S V L F V C L G N I C R S T M A E G V F R S L C S S S Q Q Y G D E
UniRef90_E1HGE1                   S I L V V C T G N I C R S P I G E R Y L R S L L P N K K I D
UniRef90_Q0B5A7                 M I R I L V V C T G N I C R S P I G E G L L R S R L P G I E
UniRef90_Q1QD60                       H C T G N I C R S P V G E Y L I R Q H A Q E A G V P V T
UniRef90_D2NPF0             M Y R I M T V C T G N I C R S P V G E Y L I R Q H A Q E A G V P V T
UniRef90_UPI00036FE2FD         M P S I L F V C L G N I C R S P L A E A A L R A E A E R L H D L V
UniRef90_UPI0003317285     Q A T K S V L F V C L G N I C R S P I A E A V F R K L A T N Q N L D K W G
UniRef90_W1DW58                   S I L V I C T G N I C R S P I A E R M L R K K C L P H K R I D S A G
UniRef90_UPI0003057A89         M Q R V L F V C T G N T C R S P M A E A L L R H K Y P H F D
UniRef90_C4LCF5             M M H I L I V C V G N V C R S P T A E A V L L Q Q A L P H K T V S S A G
UniRef90_S5J6Q5                   N I L V V C V G N I C R S P T G E R L L Q Q L L P D K Q I S S A G
UniRef90_UPI00047E7778            R I L V V C L G N I C R S P T A E Y L L R D R L R D T S A Q
UniRef90_A2FWZ0         M Q R Q K A V L F V C L G N I C R S P A C E G I C K L L S K D K I Y
UniRef90_UPI000462D0EE           I L V V C T G N I C R S P I G E R F L R R A L P N K I I D
UniRef90_UPI0001E89F03         M N V L F V C T G N T C R S P M A A A I L A G R D I K D V E
UniRef90_K6G9I5              M K N I L F L C T G N S C R S Q M A E G F A R A L R G D
UniRef90_D3QYW8               M K I L F V C T G N I C R S P M A T A L F R Q R A V N E A G R T D I E
UniRef90_M4NGN9               K R I L I V C V G N I C R S P M A E Y L F R Q R M A T R G I E
```

```
                                                    50                  60                  70                  80
UniRef90_UPI0003B37A89  V L S R A T T D G E V G N P I D E R A A S I L H S H G L D A T E H V A A Q I D S
UniRef90_UPI000474F965  V D S A G T H D F H A G K L P D P R A I A A A Q K R G Y D L T A M R A R Q I R D
UniRef90_E4QC83         V E S A G L S A F F P Q K A S K N A I L V M N E I G I D I S S H V S R L I N E
UniRef90_UPI0003756501  F A S A G T G D W H V G L P A D V R S A Q T A A Q L D L S Q H R A Q Q N K V
UniRef90_U2XP81         S A S S G T G D W H V G E P A D G R T L E A L E R R G Y D G R G H R A R R F T D
UniRef90_R5AWT8         I D S A G T G G W H V G D L P D R R M R I A A R R R G L E L D H I C R Q V T Q D
UniRef90_E6WLJ9         I G A L V G E P A D P G A V R V A E K Y G I S L F E H Y G R Q F D V
UniRef90_A0A026X1Z0     V E S A A I L G Y H V G N N P E P R A M S T L R K A G I T N Y S H I A R Q I T L
UniRef90_S8AM28         I D S A G T A A Y H A G E G P D S R T M A T L R R H G I T G Y K H A A R R V T K
UniRef90_UPI000258DDB8  V D S A A L L E Y H V G N D P E P R A M S V L K K R G I T H Y T H K A R Q I K K
UniRef90_N9BSR1         V D S A G T S N Y H P N K A P D S R S Q Q H A L K R G Y D L S S L R A R Q V Q D
UniRef90_U5DBL3         C D S A G T S S Y H I G S P P D A R M R A A A S A R G I A M N G R A R Q F T T D
UniRef90_R7D896         I G S A A T S T E E I G N S P H Y G T V A K L R Q V G I P L V P H R A R Q V R A
UniRef90_A3XM92         V D S A G T G H W H V G S M P D S R S I A V A Q K N G L D I T D Q R G M Q F K F
UniRef90_E6ZZD0         L D S A G T A H Y H T G E E P D E R T T A L L Q R R S I P Y D A D N T V T G H D
UniRef90_UPI0004753DA3  L D S A G T H D Y H L G R A P D A R S Q R H A L R R G Y D L S A L R A R Q V G D
UniRef90_UPI000331773D  I D S C A V S D W N V G R S P D S R A V S C L R D H G I N T A H K A R Q I T K E
UniRef90_UPI00036D7FAB  V E S R G T S N W E H G N P I H P G T Q K I L T K Y A I D Y D K K K R S L Q I T
UniRef90_B9A1Q6         V D S C G T A G Y H V G E E P D E R C V E C S R L V L Q S L A R Q I S T S D
UniRef90_G0LCU2         V D S A G T G G Y H I G N A P D P R S I A V A R K Y G L N I E N Q R C R Q F Q D
UniRef90_U2UBK3         I D S A A T S T E E I G N P V D L R T R Y Q L E Q K G I F C G N H R A R Q M T K
UniRef90_G0VQ14         V A S A A T T D E E I G N P V Y P P V E R L L R E H G M N P D G K R A V L A E D
UniRef90_Q06B99         L A S E K S R L V G K S A D D M A I Q V A Q E H G V S L D G H Q S Q Q P Q L
UniRef90_L1MSP0         I D S A G M I D Y H E G E L P D H R M R Q Q A A A R G Y A L T H H R P M T A E D
UniRef90_R5ZM48         I D S A A T S T E E I G N P P H R G T V A K L R E V G I P V V A H R A R Q V R R
UniRef90_L1NHX6         I D S A G I G G W H A G Q L P D S R M R Q R G A L R G F N F N S R A R Q F S P D
UniRef90_F2N2H4         I S S A G I G A L V G N P M D K T A H E V L Q D H G L E L P A H C A R Q V H M
UniRef90_M2XE02         V D S G G I S D E E I G N P V D P R A A R V L E R E G L D P S G H S A R Q V Q W
UniRef90_V9HPY5         I E S A G T S T E E I G N P I H R G T V N K L V Q V G I N I I E H R A V Q K S D
UniRef90_UPI0004791949  V A S C G T G H W H V G E G A D P R M L S A A A A A G F D L S A H R A R Q L R D
UniRef90_UPI0004168C86  Q V K S A G V F A M S G D P A S Q N A I L A L K N K G I E T K H S S Q Q I N E N
UniRef90_G8RMU0         V T S A G T G G W H A G E P A D R A S H V L A H G Y P T S H R A A Q I D D D
UniRef90_J9GVF4         I D S A G L I N Y H E G E L P D E R M R R T A A R Y G Y Q L V H R S R P A C T D
UniRef90_W6MFE0         V D S F G T H A Y H S G E D P D Y R T L E T C R R H S V P V K H H Q S I S A N D
UniRef90_UPI00047B2E6D  V K S A G V F A A E G S N A S A N T I K V L E E Q G I S L E H K S S G L T E S
UniRef90_UPI0003B3F766  V T S A G T A D Y H V G S Q P H P V S R E E G E G R G Y T F T S V A L Q L A D H
UniRef90_N8TH58         V D S A G T S N Y H P N K S P D S R S Q K H A I K R G Y D L S L R A R Q I Q D
UniRef90_W7TSN9         W Y Q K G G W S Y H E G D M A D S R M R A A A S K R G I D L T S R S R P L K A E
UniRef90_W9AVB6         V T S A G T G G W H A G E P A D H R T N Q V L R Q H G Y P T S H R A T Q I D E Q
UniRef90_R7HRG8         I D S A G I S S Y H S G D L P D Q R M R V H A T R R G L N L T H R S R Q V C D D
UniRef90_UPI0003B3DCF5  I D S A G T G D W H I G D P P D P R S I A V A A R H G S D A S L L R A R Q V Q P
UniRef90_F5XIY6         F T S A A T S R E E I G A P I D D R A V A V L R R H G Y R T G G H A A H Q V T R
UniRef90_UPI0003061212  V K S A G V F A S P G S D A S S H A K D A L E E K G I P I L H A S Q Q I T E E
UniRef90_A5V4K2         V D S A G T G D W H V G K A P D R R A I A T A R R H G L D L S G L R A R Q V D D
UniRef90_X5M101         V T S G G T G G W H A G D G A D E R A C L V L R E R G Y P S D H V A A Q V C D D
UniRef90_M7N6Z0         V D S A G T G D Y H V G D L P D K R S I K V A E K Y G L D I T N Q R G R Q F T D
UniRef90_B5IPL1         V D S A G T G G W H A G K P A D R R M R A A A A G R G L T L T S R A R Q L E L A
UniRef90_UPI000255EDE0  V S S A G T S D Y H L G E E P P H V M S S T E G E A R G Y A F T S V G A Q F A V E
UniRef90_G8YDI1         I D S F G T S G W H T G D S P D S R S A K T C R K Y G V P V Q H S A Q Q I S Q K
UniRef90_H8GVA9         V V S A G T G W H V G R P A D P R S Q A V A A A H G L D L G G R A R Q L G A A
UniRef90_Q17FY5         V D S A A L A D W N V G R S P E E R C L A V L R E N G L D L E H I G R Q I E A D
UniRef90_J8PY35         I D S F G T S N Y H V G E T P D H R T V S I C K Q H G V K I D H K G K Q I K R R
UniRef90_UPI0004288874  L G A L V G E G V A P Q A R A L A E A D G L D V S G H Q A R Q T G M
UniRef90_UPI0004675835  V E S A G T G V R R E G E D A N P R T V S V L E E N G Y A S A H T A R Q F R A S
UniRef90_V2TYU6         V D S A G T S N Y H I G D A P D S R S Q L H A K K R G Y H L S A L R G R Q F T K
UniRef90_M4WW04         A I A S A G I S A L V G H P I E S T A L A I L G D H G H R P P P H R A R Q L N R
UniRef90_UPI0003B42B41  L D S A G L G D W H A G E P P D P R A I A V A H R H G I D I S G Q R A R R P D D
UniRef90_X5G3K6         L G A L V G K G A D E R A T S V A R D H H L S L D G H V A R Q V R R M
UniRef90_D8GKY7         A I S A G V A V V E D S V T S K N S A A V V K Q N I N L D L S S R K A V Q I N E
UniRef90_UPI00034AB341  V D S S G T G H W H I G D G M D S R A S A T L R V H G Y L T H H T A R Q F D P E
UniRef90_B2VY49         I D S C G T G A Y H V G S S P D S R T M S T L R A A N I T T Y K H S A R K F T D
UniRef90_I8HZN2         V L S A G T G A M I G W P A D P L S V E V M L E K G I D I N A H R A Q Q L T R
UniRef90_F6D165         L D S A G T A A Y H I G K L P D S R S I D T L K Q V G I D I T G Q R A R Q E D D
UniRef90_D8LN75         I D S C G T G G Y H T G D S P D A R M T A A A A K R G V M L S G A S R P L T P G
UniRef90_UPI00046D67B3  V F S A G T R P Q G L N P L A V R V M A E A G V D L S G H T S D P V E K
UniRef90_D7AWC6         V D S F G T G D W H V G G G M D P R A A S T L R V H G Y L T S H T A R Q F H E V
UniRef90_A6AQ25         I A V E K S H L T G K P A D D M A S T V A L E H D I S L E G H S A Q Q L T P
UniRef90_R7HAT6         I A S A A T S T E E I G N P I Y P P A Q A E L K K H Y T N F A G K R A R Q V T K
UniRef90_UPI000306C81A  V D S A G T G G W H S G D A P D P R A I A V A R Q H G V D I A M L R A R Q V R D
UniRef90_K0NDP9         V C S A G I E T H G L N P H A V T V M A E A G V D I S H H R S R H L D E
UniRef90_Q21SY4         V A S A T H D F N T G E P V D F H A Q K H A M R R G Y D L S G L R A R L L H D
UniRef90_W4Q763         V K S A G V Q A Y P N S P A S E G T K A V L A E K G I E F D H L S Q P V T D E L
UniRef90_Q8RD95         A K S A G V F A P E G F P A S S E A V E V L K K E Y G I D I S D H R A K S L R E
UniRef90_D9S1S1         V Y S A G S N P A G F V H P L A V R C M E E V G I D L S G Y R S K S L D D
UniRef90_B6QEN1         I D S S G T G A Y H A G D S P D Y R T M A T L K Q H N I T N Y H H S A R K I T K
UniRef90_E1HGE1         S A G T S A L V D H A A D E S A I L V A S S H G I S L D G H V A K Q F T S
UniRef90_Q0B5A7         V I S A G T S A L V G A P A H A L A S S V S A E A G I D I S A H R A Q Q L T A
UniRef90_Q1QD60         V G A L V G H P A D P A A L E I M S K Q Q I D L T S H I A K Q L D E
UniRef90_D2NPF0         V T S S G I S N E E E G N R I D P R A A A Q L T A R G I D P S A H R A S V F T V
UniRef90_UPI00036FE2FD  V D S A G T G D W H A G E P P D P R A Q A T A R R H G V E I S G L R A R H V T Q
UniRef90_UPI0003317285  I D S A A T S T Y E I G N P P D Y R G Q N C M K K H D V P M N H I A R Q I T E N
UniRef90_W1DW58         V G A M V D N P A D D M A I Y I S S K H G L S L T G H K G R Q F S M
UniRef90_UPI0003057A89  V Q S A G M F A G Y G Q K A N D N A R Q A L E N K G I S C H H T S Q P V T R E L
UniRef90_C4LCF5         I A A L T G Q S A D V S A T A V A Q H G I S L R
UniRef90_S5J6Q5         I A V E K S R L T G K P A D E T A R L V A S E R G I Y L L D H K A Q Q L T A
UniRef90_UPI00047E7778  I S S A G L G A L E D H P M D A T A A A L L H E H G I D A Q A H R G R Q L Q P
UniRef90_A2FWZ0         V S S A G T S R W H R N E C P D E R S Q E I C M K H G I D I S G C R A R Q I R A
UniRef90_UPI000462D0EE  S A G T G A L I E P A D E S A E K I A N L S L E G H R A R Q F T S
UniRef90_UPI0001E89F03  V K S A G V F A M P G S E A S S Q A R E V L K E K G L P V E H Q S S Q V S D E
UniRef90_K6G9I5         V L A A Y S A G V E K H G M N P R A V A V M A E A G V D I S G Q S S K L V S E
UniRef90_D3QYW8         V D S A G L A A F E G Q A A A D A A I R I M R E D Y G L D L T D H R A K N L V F
UniRef90_M4NGN9         F S S A G L G A L V G S P M D A T A L Q L L A E N G I D G T M H R A H Q P A L
```

```
                                            90                100               110               120
UniRef90_UPI0003B37A89   E E L A D M D L V L A M D T D H F L A D I D P S Q R P Q L R M F R S F D P H E R
UniRef90_UPI000474F965   Y D E F D L L L A M D L D N L E H L Q S N C A T H L P K I R L L M N Y A K K Y K
UniRef90_E4QC83          E M I K E S T L T M E R Y H K E V I T K M Y P G V M D K V F T L K E Y D D K K K
UniRef90_UPI0003756501   N D W D W F V A M D D N R M N L L A M G V P E N R L L M M R Q F E T D S S I S
UniRef90_U2XP81          F D R S D L I V A L D R S H E R V L S N W A R T T A D T L L M S F D A H A G G D
UniRef90_R5AWT8          D F E F D I I V A M D E G N Y R D L R A L S P E G D R R I H R I C E W F S P R Y
UniRef90_E6WLJ9          L Q Q Y E L L V M E K E Q M E E I S R R A P E L R G K T M L L G H W I G N
UniRef90_A0A026X1Z0      D D F F D W I F G M D E Y N I Y R L Y E M Q P D S R A T I E L L G K Y D P A G L
UniRef90_S8AM28          E D F F D Y V L G M D Q S N L Q D L L E V R D S V V A G L R R K L H A R V G G G
UniRef90_UPI000258DDB8   D D F Y K F D W I M D S A I T Y D L C Q M Q P E S Q V K I E L L G K Y D P N G E
UniRef90_N9BSR1          F F E F D L I L A M D H E N F D D I Q Y K P H Q L L A T V A L M S E H D P V Y G
UniRef90_U5DBL3          F E A F D L I L A M D R E N Y R N I L R L D P Q Y G D R V K M M C D F A N H H D
UniRef90_R7D896          N E Y A N W M D S A N M R N L R R I F E R E P E A Q C A K L I K L L S L T G S N
UniRef90_A3XM92          F D R Y D H I F V M D N Y N Y E D V V A Q A T K D E D K A K V Q L E I F P G E R
UniRef90_E6ZZD0          F D S F D Y I F G M D T N N V R N L Q R M Q P K G S K A R V R L F G D V D D R Q
UniRef90_UPI0004753DA3   F E R F D L V L A M D H A N L A A L R A L H P E A E R L R L L M S F A T R H D A
UniRef90_UPI000331773D   D F T F D Y I L C M D E S N L R D L N R K S N Q V K N C I E L L G S Y D P Q K Q
UniRef90_UPI00036D7FAB   E R D L E A F D Y L I G M D K E N V K D L L A L S K G R W D S K I H L F I E
UniRef90_B9A1Q6          F V R F T H I L A A D E N N L R H L Q S M K P N A T A E V R L W G S Y H D N
UniRef90_G0LCU2          F K K F D V I Y A M D R S N L N N I L N L A D E E A E K V K L L L T E V E L P V
UniRef90_U2UBK3          A D Y F D Y L I G M D S N N R R N M M R I L G T D P E H K V S L L L D W S G A C
UniRef90_G0VQ14          Y D F Y D Y F I G M D D E N L R D M K R I F H G D P D Q K C H L L M D Y T A N P
UniRef90_Q06B99          C S Q F D L I L V M E K G H I N A L S D I A P E A R G K T M L F G Q W I G Q
UniRef90_L1MSP0          F R T F D C I V A M D A D N L R R L R E K C P E P M N K V V L L S D Y A H P D F
UniRef90_R5ZM48          A E Y W D H I V Y M D A E N A R G L R R I F G S D P D G K I S R L L D W T D R P
UniRef90_L1NHX6          D F R F D Y I F V M D N E N Y R A I T A L A R N N K Q K V R M L A D Y I Y K N A
UniRef90_F2N2H4          L H Q A D L I L A M E N S H I Q H I R Q I A P E V H G K T F L I G K W Q D N
UniRef90_M2XE02          F E D H D L L A M T P E H A R A L R A M A P E G A Q D R V R L Y R S F D P Q A
UniRef90_V9HPY5          L E K Y D Y F I A M D S A N V R N M K K I L G N N A N I S L L L E Y T N S K
UniRef90_UPI0004791949   L D E Y D F V F G M D G D N L R G I G R F T P R S R A E T G R F L T W S G A P P
UniRef90_UPI0004168C86   L E W S S K V L S M T L S H K Q M L V S R F P Q Y K D R I F T F Y E Y I N G Q A
UniRef90_G8RMU0          H L S A D L V I A L G R N H V R M L K D L G V E D D R V R M L F D P R S G A H P
UniRef90_J9GVF4          F E R F D Y I V A M D H K N H E K L E R M A P T P Q Q R I V L M A N F L T A Q K
UniRef90_W6MFE0          F K E F D Y I I G M D R S N M A A L E K K R P Q A I V K M F G E W R T D P S Y G
UniRef90_UPI00047B2E6D   V D W A T Y I L T M T A G H K D T V L A M F S A A A G K T Y T L K E F A G Q T G
UniRef90_UPI0003B3F766   F D E V D L V V V M D A S N E A D V L A L A P Q D A A K V V R L G A F A S D A D
UniRef90_N8TH58          F L E F D L I L A M D H Q N F A D I Q H L Y N Q A S S Q A L M S E H D H V Y P Q
UniRef90_W7TSN9          D I D F F D F L I C M D G A N K S A V M E A A D Y W K K I R L M T E Y C N K G A
UniRef90_W9AVB6          H L A A D M V I A M G R N H A R M L K D M G P A E R L R M M R S F D P R S A Y A
UniRef90_R7HRG8          F E R F D L I L A M D D S N Y D H L R R L A P E E M D K V K R I A S F F R R H W
UniRef90_UPI0003B3DCF5   D D F F D W I A M D R Q N F A D L Q S L A P Q A K A E L R L A L D V I D Q R K
UniRef90_F5XIY6          S E D A E L V L A M E D I H L R K M L A I A P G A D N R L L T D F D P D A A P G
UniRef90_UPI0003061212   L E W A D M V L A M T E S H K Q L V L G H Y P S T K E K V H T L Y E F V E G T S
UniRef90_A5V4K2          F R A F D R L V A L D R S N L D A L R A L A P D D G R A E L L L D H V A G R E G
UniRef90_X5M101          H L G A D L V V A L G R N H L R I L T D V A G D R L R M L R S F D P R S G A H A
UniRef90_M7N6Z0          F D A F D L I Y V M D E S N F K N V T R N D K D L K K V K M I L D E I Y P N Q N
UniRef90_B5IPL1          D L T F D H I L T M D A D N L A E V R G L S M E L L G S R Q D L A R E P L T R Y C
UniRef90_UPI000255EDE0   D F D T A D M D A A N D R D V R A L A R G T A D E R K V V R L G A D V A D R G V
UniRef90_G8YDI1          D Y N F D Y I I A M D E S N L Q D L V F N K P N C K S R I A L F G E W R P Q F A
UniRef90_H8GVA9          D F F Q D V I L A M D A G N A G D A R R L A F E A R V L L M R D F D P G R G
UniRef90_Q17FY5          D F H F D Y I F G M D E G N V R D L M A L A P E N C P A S V E L L G N Y R M K E
UniRef90_J8PY35          F D E Y D Y I I G M D E S N I R N L T K I Q P G S K A K V C L F G D W N T N D G
UniRef90_UPI0004288874   L E Q S D L V L V M S D G Q R Q A I G R N H P R A L G K T M R F G H W D D G R G
UniRef90_UPI0004675835   W F P A I D L V I A D E G H L R E L H R L A R A A R V R L L R S Y D P A A G D A
UniRef90_V2TYU6          F D L I L A M D E Q N L Q Q I E K L K S I A E Q E F G A S A L K A E L A M M T R
UniRef90_M4WW04          E H E A N L V L V M E H G Q I Q D V I R L S P E A R G K T F L L G K W L H N
UniRef90_UPI0003B42B41   F H R F D L I L C A D R S N L M Q L R Q R S P D A K A E C A L F L E W S D V Q G
UniRef90_X5G3K6          C R E Y D L I L T M E K R H I H A L C D I A P E M R G K V M L F G H W D N E
UniRef90_D8GKY7          D M I R K S M L T M T G Y I R D I K K N F P E F K N K V Y T L N E F V S L E
UniRef90_UPI00034AB341   D A T R D L V L A M D L D N L E D L S R V F D P D R L R L F R S F A P G G G P N
UniRef90_B2VY49          F G D F D Y I L C M D D E N L A D V E A L R R E E V R R V M L F G E F G G R R G
UniRef90_I8HZN2          P L L A G V D L T L D R G H S D W I N S R Y P E F R G K V H K V L R W R E N
UniRef90_F6D165          F Q T F D W I L A M D Q A N Y Q L K R L Q P S S H A K L V M F G E F A D H V S
UniRef90_D8LN75          D F D K F D L V V G M M S T A A E H W G K S Q E A I S K L R T M T S Y C R S S G
UniRef90_UPI00046D67B3   Y L G Q D F D L V V T V C G G A K E S C P V F V G R V K D R Q H W P F D D P A G
UniRef90_D7AWC6          L A D R D L I L A M D L D N V D E I R R I V D E Y R V R L F R S F A P G T G P N
UniRef90_A6AQ25          E L C A K Y D L I M E K G H Q E A L T K I A P E A R G K T M L F G Q W I G G K N
UniRef90_R7HAT6          E D Y H H Y D Y C A D T N N I R N T E R I T G D T E G K I H L L L D Y A D R R G
UniRef90_UPI000306C81A   F T R F D L I L A M D H D N L A G L R A M A P S H P R E L R L A L D L E G R A G
UniRef90_K0NDP9          F K H S R F D Y V I T C G H A H E T C P W F P G G S R V I H A G F D D P P K M A
UniRef90_Q21SY4          F E R F D L I L A M E S N L L L L R L S C P Q K Y H D K L H Y F Y C S D P A S
UniRef90_W4Q763          L H W A D I V L T M T N S H K E M I K I F Y P H V N E K L F T L K E Y V D P Q S
UniRef90_Q8RD95          E D G A D L V L A M A F S H K R S L V S Q Y P E Y A D K I F T I K E F V G L E G
UniRef90_D9S1S1          V P Y Q D L D I I T L C G N A A E N C P H V P G K D V R H W G L P D P A G G
UniRef90_B6QEN1          D D F F D Y I L A M D E Y N L R D L R L R D N I I A E V R L F G D F N P G G G
UniRef90_E1HGE1          S R Q Y D L I L V M E K Y H I E Q I G R V A P E A R G K T M L F G H W L N Q
UniRef90_Q0B5A7          A R R A D I V L T M E A G Q H R E I V E R H P F S L G R V F R L D G R D G
UniRef90_Q1QD60          Q L A K K V D L I F T M S Q T K W I E E R W P F C R G K T F K L G H W M N
UniRef90_D2NPF0          E D F D R N D L I L A M D A P H Y L R A R N D D K A K I R M M R S F D P K D Q
UniRef90_UPI00036FE2FD   F R R F T H V I A L D H E N L K N L R R L R P D A T A E L S L L L D H V P R E G
UniRef90_UPI0003317285   F S T F D Y I L C M D E S N L R D L N R K I V E V N K R D I L F L
UniRef90_W1DW58          A R E Y E L I L V M E N K H I E E I S K I A P Q A R G K V M L L G Y W M N S K Q
UniRef90_UPI0003057A89   L N W A D L I L T M T D G H K Q S I K L E Y T S F D D K L F T L K E F V D D E G
UniRef90_C4LCF5          A L C Q Q H D L I M E Q Q H I E A V T R I A P E V R G K T M L Y G H W L K
UniRef90_S5J6Q5          Q L C A K Q D L I M E Q Q H I D A L T E L V P E A R G K A M L F G H W I G S V
UniRef90_UPI00047E7778   S M L R D M D L V M E K S H A A R I A R L A P E S S G K V L L L G K W L G E
UniRef90_A2FWZ0          D D W F D I I A A L D D T V Y E N L N S S R P D D A I A K V L F N A P H G I Q
UniRef90_UPI000462D0EE   F R Q Y D L I L A M E K Y H V E Q I G R I A P E A R G K T M L F A Q W L E H
UniRef90_UPI0001E89F03   L E W A D Y I F T M T A Q H K M L L E N S Y P N S L G K T Y T L K G F A E Q S G
UniRef90_K6G9I5          L E V A F D Y V V T L C G S A H D L C P F F P G P V K K V V H V G F E D P P A L A
UniRef90_D3QYW8          D M C A D Y I F T M T E S Q A D A R R Y L P K V K A E I T S L G K F C Q G K G D
UniRef90_M4NGN9          L R Q A D L V L G M E K N H V A A M I R L A P E V R D K V Y L L D K W L H G N
```

```
                                130              140              150
UniRef90_UPI0003B37A89  Q G V Y D P W Y G D D F R E T W K L I S A S L P A L V D Y V R S N I A S R G
UniRef90_UPI000474F965  V P F P D P Y C R S D F E A V L D Y I E D A C S G L I S L L S Q
UniRef90_E4QC83         L D V V D P Y G G E E Y R R C R D E L S Y L L D K L L S K V
UniRef90_UPI0003756501  L D V P D P Y Y G E G F E D A Y R M F C D N A D H I L G Y L V K Q S D
UniRef90_U2XP81         L D V P D P Y Y G D A F D E V L A M I E S A S R A L F R Q L E
UniRef90_R5AWT8         D H I P D P Y Y A E G F E L V L D M L S E A C S N I I A
UniRef90_E6WLJ9         K D I P D P Y R K E A F E S V F K L I E K A C Q C W V A K L I
UniRef90_A0A026X1Z0     T V I Q D P L F V D G F E K A F Q Q A L R S V R S F L E
UniRef90_S8AM28         E V V D D P Y Y G G G F E E V Y K Q V V R F S E S F L E Y L E S R K S
UniRef90_UPI000258DDB8  L N I R D P H N S A G F E K A F E Q A T R S I Q S F L K H
UniRef90_N9BSR1         Q A L P D P Y Y G D G F E R V L D Q C E S S A Q A W V Q I F K Q Q
UniRef90_U5DBL3         T E V P D P Y Y G D G F D Y V I D L L L D A C S G L L A R T I E E Q N L
UniRef90_R7D896         R D V A D P W Y T G N F D A T Y E D V L A G C K A L L K Q L
UniRef90_A3XM92         V D V P D P Y N D S G F D R V Y E M L D E A T T K I A E R L
UniRef90_E6ZZD0         P   I A D S Y Y T G D F E A T Y K Q V L R Y S H A F L R E L
UniRef90_UPI0004753DA3  E E V P D P Y Y G D G F E R V L D Y I E D A C D G V I D M L R G R L
UniRef90_UPI000331773D  T I I E D P Y Y G S D F E T V Y Q Q C L R C C Q A F L E K
UniRef90_UPI00036D7FAB  G G V P D P W Y T G D F E E T Y Q L V Q V G C K N W A S I I
UniRef90_B9A1Q6         K A I P D P Y Y G G G F E K V Y Q Q C V R L S H A F L D N V V G K A E
UniRef90_G0LCU2         I E V P D P Y W D D G F D K V F H L I D K A C T S I A K K L
UniRef90_U2UBK3         R G I A D P W Y T G D F A T T Y D D V L E G C T A V L T A L Q S Q L
UniRef90_G0VQ14         R P V A D P W Y T R D F Q R T W D D V Q E G C R G L L D V L R G D E D
UniRef90_Q06B99         R D I P D P Y R Q E A F D H A Y A L I E Q A A A A W V K
UniRef90_L1MSP0         T S I P D P Y Y G T D F D L V I D L C E D A C A H L L L T Q L
UniRef90_R5ZM48         G D V A D P W Y T G N F D A T Y R D V L A G C T A M L E Q L
UniRef90_L1NHX6         N T I P D P Y Y G D D F D Y A L D L I E D A V S R L L K
UniRef90_F2N2H4         L E I P D P Y R Q S A F E H V H N L L T K S V E S W L P Y L K
UniRef90_M2XE02         T D L P D P Y Y G E G F E S T W E M V V D A L P G I V E H A R E Q A G
UniRef90_V9HPY5         R D I A D P W Y T G N F D E T Y N D I V L G L E G F L N Y L
UniRef90_UPI0004791949  E D F P D P Y Y G D G F T R C V A L A E R G V A G L L E R L R R R
UniRef90_UPI0004168C86  K D I S D P Y G G S T Y E N T L T E L E E L V K Q I V Q K
UniRef90_G8RMU0         M D V E D P Y Y G D D F E D V F A V I D A S L P G L H Q W V D E Q L T E R G
UniRef90_J9GVF4         K N F P D P Y Y G R D F E L V V E L L E E A C D E L L R Q V S K E
UniRef90_W6MFE0         K L I E D P Y Y G G G F E R C Y N Q V R H F S E E F L K Q
UniRef90_UPI00047B2E6D  A D I T D P Y G G E I Y R N T Y A D M I E A I D Q I V D R L K T E K S
UniRef90_UPI0003B3F766  R D V P D P W G M E A Y V R M Y D Q L E D A C G L V R A I Q
UniRef90_N8TH58         Q A L P D P Y Y G D G F E R V L D Q C E S S S L A W V H V F Q Q Q
UniRef90_W7TSN9         R T V P D P Y Y G D G F E K V L D L L Q D A C D
UniRef90_W9AVB6         L D V E D P Y Y G S D F Q D V F D V I D A S L V G L H E W V D K R L
UniRef90_R7HRG8         D C I P D P Y Y G E G F E N V L D L L D D A C Q N I A D Q I E T K
UniRef90_UPI0003B3DCF5  G E V A D P Y H G D D F E R T W A E V T A I A M A M A D E I A A Q
UniRef90_F5XIY6         S G I D D P W Y G S G F E R T L A S I E G A I P G L L A H L
UniRef90_UPI0003061212  K D I S D P F G G S   L S I Y Q S T L V E M E K L V Q T L V E K H S
UniRef90_A5V4K2         E D V A D P Y F G E G F E Q A W R D I G A G V D G L L A E I
UniRef90_X5M101         L D V E D P Y Y G A D F E D V F T V I E A S L P G L H A W V D E A L A A R
UniRef90_M7N6Z0         Y N V P D P Y T G G G F D S T Y K M L D E A C G Q I A K K L L K
UniRef90_B5IPL1         R E H P D P Y Y G E G F E R V L D L L F D A C Q G L L E H L R P R
UniRef90_UPI000255EDE0  R D V P D P Y G L S A F V S M Y D Q I E D A V D G L V R S L R
UniRef90_G8YDI1         K I V S D P Y Y G G G F E T N F R Q L G H F S E E F L K R
UniRef90_H8GVA9         E D V P D P Y Y G G G F E D M Y E M L E R S A R A F A Q A A R G G G E L R G
UniRef90_Q17FY5         L D I F D P Y F E R G F R R C Y D Q I V I C C R N F I Q Q K R Q
UniRef90_J8PY35         T I I E D P W Y G D D F E Y N F Q Q I T Y F S E Q F L Q K
UniRef90_UPI0004288874  R D I P D P Y G K E A F R Q V H A L L T E A A Q S W A E R L
UniRef90_UPI0004675835  L D V P D P Y G R E E Y E C L E M V E A S S Q G L L A A V R L E L E
UniRef90_V2TYU6         E D I A D P Y Y G T G F E D V L D Q C E S A S H A W V S Y F Q Q H H
UniRef90_M4WW04         L E I P D P Y R K E A F E H S Y R L I E R A V S S W A G R L R P R R Q
UniRef90_UPI0003B42B41  G E V P D P Y T G G E F E A A F S L V E T G A L G L V R R L
UniRef90_X5G3K6         R E I P D P Y R K E A F E A V Y T L L D Q S A Q Q W A Q A L K
UniRef90_D8GKY7         Q D I T D P F G K E E Y R Y T Y K Q L K N G I L L L I N K L K G D R D I
UniRef90_UPI00034AB341  P E V P D P Y Y G D G F T A V L N M V E A S S K G L T G E L V T R L R
UniRef90_B2VY49         E E I D D P Y Y G E G F R V A F G Q C E R F G R C F L E R L E
UniRef90_I8HZN2         A D V P D P H R R A A F D E A Y E L I V D G W V K R L
UniRef90_F6D165         L E V D D P Y Y G E G F T Q M R H H L S E I A K R F L D H I A S D
UniRef90_D8LN75         K S V P D P Y Y G G G F E T V L D L L D D A C Q G L L E K C R
UniRef90_UPI00046D67B3  A T G T Q E Q I L A V F R R V R D E I R A R V E A F L N E
UniRef90_D7AWC6         P E V P D P Y G D G F T A V L N M V E S A A K G L T G E L V T R L R
UniRef90_A6AQ25         I P D P H R Q S R E A F D H A Y A L I E E A A H A W T K K L
UniRef90_R7HAT6         K S I A D P W Y S G D F T Q T W N D V V A G C T G F L N Y L K N V H K I
UniRef90_UPI000306C81A  Q A V A D P Y Y G D G F E A T W A D A S A I A D G V L R H
UniRef90_K0NDP9         K N H D D P E K K D C Y R K V R D E I K D Y I L T L P D S L T H S F G L
UniRef90_Q21SY4         Q D V P D P F Y G Q D F E H V L D V I E D G C E G V L I A V N E E I D
UniRef90_W4Q763         D D I D D P I G G E A Y R Q T A E Q I E Q C L K K
UniRef90_Q8RD95         D V E D P Y G M E V Y K K T A E E L S G L I D K L I E K L S E E
UniRef90_D9S1S1         A E G S E E Q R L D A F R K V R D E I K I R V K D L I E S V
UniRef90_B6QEN1         Q E I E D P Y Y G G G F E I A Y E Q A M K F S K G F L A Y L E K K
UniRef90_E1HGE1         R D I P D P Y R K E A F L S V Y K L I E Q A G G L W A Q K L
UniRef90_Q0B5A7         I D V P D P Y P I D A F R H A Y S L I E R G V N A W V P K I Q
UniRef90_Q1QD60         K D I A D P Y K H E A F E T A H Q D I V E G L K Q W A D K V
UniRef90_D2NPF0         L G I Y D P W Y G S E R D F V Y D L I D A A A R G L I N H L K Q E G D A Q
UniRef90_UPI00036FE2FD  Q A V A D P Y F G D G F E I T W A E V T A A A K G L I A K L
UniRef90_UPI0003317285  
UniRef90_W1DW58         I P D P Y R K E A F E S V Y Q L I E K S C E L W A A K L A K
UniRef90_UPI0003057A89  D D I V D P I G L E T Y E H T L Q E I E K Y I D Q M V E K
UniRef90_C4LCF5         R D I P D P Y R Q E A F E F T F D L I A E A T Q A W A Q R L N K
UniRef90_S5J6Q5         D I P D P Y R Q E A F E H A L S L I E N A A H A W A K K I
UniRef90_UPI00047E7778  K E I P D P Y G Q S A F E H V Y G L I D Q A I A R W L P Y L T
UniRef90_A2FWZ0         D P Y Y G G G F Q K M F D Q I Y E A M T P F L
UniRef90_UPI000462D0EE  K D I P D P Y R K E A F A S V Y Q L I E Q A G L R W V E K L
UniRef90_UPI0001E89F03  E V M D P Y G G E T Y R A T F E E L Q N V I E A I V E K I K
UniRef90_K6G9I5         A G T S E E E A L S H Y R Q V R D A I R E F V A G L P E S L E K
UniRef90_D3QYW8         C I A D P Y A G D D   K V Y R A V A G E L K Q L V
UniRef90_M4NGN9         D I P D P Y R Q Q R F E H V H E I I T Q G V S S W E P H L
```

```
                                  1         10        20        30        40
UniRef90_N1V0N1                   M Y R I I T V C T G N I C R S P M A Q Y V L K A L A D A G L A A K A T
UniRef90_F8KT70           M S A P Q S L L F L C L G N I C R S M L A R G I A L E L I Q K Q Q L   N L K
UniRef90_UPI000237DE28                V L F V C M G N I C R S P L A E A A F R A A A R Q A G L   Q V T
UniRef90_UPI0004768533          P Y R I I T V C T G N I C R S P M A A L M L A E A F T A E G L G K V V
UniRef90_R5XZR0                 M T I T F V C T G N T C R S A M A E G I C K R L I A D K K I E N I T
UniRef90_N6YX29                   K I L I L C T G N I C R S P L A E A L I R D R A H A K G K Q I L
UniRef90_F2ZJ48                  S V L V L C V G N V C R S P M A V A M M R Q R L G A T T V
UniRef90_UPI00034B5D9A   G P Y R V S L V C L G N I C R S P M A E K V L A A D L E R A G L G D V A
UniRef90_C6Y3B7             M K R V L V L C T G N S C R S Q I A E G Y L R H F A G   D A A E
UniRef90_UPI000329D19F        S I L V V C T G N I C R S P I G E R Y L R K N L P T K K I D
UniRef90_N6X4T4             M T R V L M V C T G N I C R S T M A H Q V L A E A V E A A G L D Q I H
UniRef90_Q4S716              S V L F V C L G N I C R S P I A E A V F R K M A D M G V A D K W R
UniRef90_A0A023CCR3          R I L I V C V G N I C R S P T A E K L L S A A L A S   S D I E
UniRef90_K2E1W1            K K K V L F L C T G N S C R S Q M A E G L L N H Y   Y S D K Y E
UniRef90_K4RIV6              M S L L F L C T G N I C R S M L A R G I A T D I I N K R G L N L I
UniRef90_G9ZCM3       M K N L K I L M V C M G N I C R S P M A E G V A R Y L L R G M G R S D V I
UniRef90_K0YVA3             M K R V L M V C T G N I C R S T M A H Q I L L E A A R D A G V D I V
UniRef90_A0A023NQX2          K R I L I V C M G N I C R S P A A E Y L F R Q R V N G R   G I Q
UniRef90_C8XD05               H V C V V C T G N I C R S P I G E Q V L R R A L Q E A G L D D V R
UniRef90_UPI000463A2C4        K S I L V V C I G N I C R S P T G E R L L K   E S L P E L K
UniRef90_B4MBL7      K A R K T K Y V L M V C V D N I C R S P L A E A V L R D I I V K D N L H N W R
UniRef90_A0A022FUV6          M I R I L V V C L G N R C R S P M A E S L L R R A L P N C R V
UniRef90_UPI00047B63E9         M N V L F L C T G N S C R S I L A E A T F N H L A P S G
UniRef90_C4ZJG3             K I L T L C T G N I C R S P L A E F L L R D R L A A R   G R A A
UniRef90_UPI000422FEC4        K I L V V C V G N I C R S P T A E K L L K R Y Q P E   L T
UniRef90_UPI0002C43CB7   Q V L K S V L F V C L G N I C S S P I A E A V F R K L E T D Q N L S K W R
UniRef90_A1WT74       M S K T R T L L F L C T G N S C R S Q M A E G Y A R Q M A G N   D W R
UniRef90_A1W8V1       M T T P L H V L F L C T H N S A R S I L L A E A L L N A M A G   G R F K
UniRef90_G2IL64                V L F V C L G N I C R S P L A Q A A F A H E A R R A G L D   V L
UniRef90_B7K5J0           M K K V M F V C K R N S C R S Q M A E G F A K T L G Q   G K I E
UniRef90_V6PGZ7                  M V C V G N I C R S P T G E R L L R E R L P G R Q V S S V G
UniRef90_D7BD98         M K R K L S V L C S H N S A R S Q M A E A L L R Y Y G G   E R F E
UniRef90_N0AC08             K S I L V V C V G N I C R S P M T V G L L Q Q A M P E L T
UniRef90_D3US06              M N V L F V C T G N T C R S P L A E K I L K D L R P   D I A
UniRef90_W9AHA8             M K I L F V C T G N T C R S P M A E A L V K H K I P E A E V Q S A G
UniRef90_T0MKJ2         K Y K I L L V C T G N T C R S P M A E G I L K Q M L K E K N I S H I E
UniRef90_B7GMG8       M V S Q T N V L F V C T G N T C R S P M A E A L L R H K Q L P H V Q
UniRef90_UPI000428613D      T K Q R V Y F L C T G N S C R S Q M A E G W A R Y L G G   D K I K
UniRef90_W4BZT8            M K H I L F V C T G N T C R S P M A E G L L R K L A S E R G I Q V E
UniRef90_UPI0004023EDC      M H L L F V C T G N T C R S P M A A F L A Q R E V S E R G L D W
UniRef90_Q3K9H2            K K I L V V C V G N I C R S P T A E L L L R N A L T P   S A I S
UniRef90_W1TYU6             M K V V F V C T G N T C R S P M A E A M W R Y L M K D V T D D S H T
UniRef90_M1ZA40             M N I L F V C T G N T C R S P M A Q A L L E E V A K E K G L D I I K
UniRef90_A0A014MAX7           S I L V V C V G N I C R S P T G E R M L K A A L P N K K V A S A G
UniRef90_G7VVU3            M K H I L F V C T G N T C R S P M A E G M L R K L A A E H R L G L E
UniRef90_M5RHM4            M I H V L F V C L G N I C R S P M A E A M F R K R V E D E G L E H F V
UniRef90_UPI0004687F9F    M K K I Y F I C T G N S C R S Q M A E G L A K K Y L P N W E V R S A G
UniRef90_E3DYA4             M N I I F V C T G N T C R S P M A E A L F K S I A E K K G L D V T
UniRef90_UPI000395800A       K S V L F V C L G N I C R S P I A E A V F R K L I T D E K L E R R R
UniRef90_B3QQX2         K L K V L I L C S G N S A R S Q M A E A F L R H L A G   D R F K
UniRef90_UPI00028A3768       M N I Y F V C T G N T C R S P M A E A I L R A K   K L V G V D
UniRef90_M2QLL7             I K V L F V C T G N S G R S P M A E A L L R H R A G   S T V E
UniRef90_UPI0003746283     M K K V L V L C T G N S C R S Q I A E G Y L R H F A G   D K A T
UniRef90_UPI000472E825       M N I C F I C T G N T C R S P L A E G I L K S K   Q L E G V S
UniRef90_UPI00037DA273     M T Q L Y F L C T G N S C R S Q M A E G F A R Q M A P Q D W
UniRef90_L8FXV2           M K S V L I L C T G N S C R S H M A E G I L N A A A G   D L I N
UniRef90_UPI0002FEECC2       K R I L I V C I G N I C R S P T A E H L L R V A L A P T D I
UniRef90_M4RHF1                V M T V C T G N I C R S P M A E I I L R E R F N E R G L D R V R
UniRef90_UPI000405BA3B      M K V L F V C T A N T C R S P M A E E I F N K L I D N   S N I I
UniRef90_F2K3A1            M K L L T V C L G N I C R S P A A Q G I I E N F A Q E R G I N V T
UniRef90_E6KSL8            P T R I L M V C T G N I C R S T M A H A I A E Q S A A R A G I P I L
UniRef90_V5E5W1              S I L V V C I G N I C R S P T G E R L L Q R A L P D K K I D S A G
UniRef90_UPI00047D69AC       M N I L F V C T G N T C R S C M A E A I F N K H C D I K N I K
UniRef90_W8A5C9        M K K K K N V L V V C T G N T C R S P L A E A Y L K K Y G S   E H V N
UniRef90_K8F0E7            M K V L F V C T G N T C R S P L A E K I I L Q N L R P   D L D
UniRef90_S2XNZ2             M N I Y F I C T G N T C R S P M A E A I F Q S   H N K E G M H
UniRef90_F6DP73             K I L F V C T G N T C R S S M A E G L A R K A A Q E L G S Q G L V
UniRef90_UPI00037B62FD  K A P V R V L F L C T G N S S R S Q M A E A M L R K A A G K A   V H
UniRef90_Q0RKE8     A R M T T K P S V L F L C V H N A G R S Q M A A G W L T H L A G   D R V E
UniRef90_UPI0003471D4F        L L I V C L G N I C R S P V V A E V V R Q R F A A A   G R A V S
UniRef90_R5AGB4            M K I L F V C T G N I C R S P M A E G I F R K M M Q E R D M E D K V
UniRef90_A4A526               V L M V C T A N V C R S P A A E A L L R H H L Q Q R M G R S I A
UniRef90_U3QTD6             K T I L V V C V G N I C R S P M A A H L L Q Q A V P W C T V
UniRef90_G4HCB3            M K K I L F V C T G N T C R S P M A E G M L R K L A K Q R G I P L E
UniRef90_B3EMM2           M K H L L F V C Y E N I C R S P M A E G I F S R L V A E G M S H D F T
UniRef90_UPI00037D140E     M K K V M F V C K R N S C R S Q M A E G F A R R L G Q G K
UniRef90_F1S9H9       Q V T K S V I F M V L C N I C R S P I A E A V F R K L V T D Q N V D N W R
UniRef90_UPI00047E20C7     M K H I L T L C I G N I C R S P L A Q A L L A R E L P G H T
UniRef90_G2DUT1              N I L I V C V G N I C R S P T A E Q L L R K K L N I Y S A G
UniRef90_UPI0003B389D6   A L M N I L F L C T G N S C R S I I A E A L F K S M A P   A G
UniRef90_M5QVE2           N Q T N V L F V C T G N T C R S P M A E A L L K H K Q L P H V Q
UniRef90_T0CIZ8            K K N I L F L C T G N S C R S Q M A E G W G K A L K G D K Y N
UniRef90_UPI000465B24C      M A K I Y F L C T G N S C R S P M A E G F A R Q L P A T W Q
UniRef90_UPI0004266F18      M N I L F V C T G N T C R S P M A E A L F K S A A S Q K N L D V S
UniRef90_X0MZT2       M S D K P S V L F V C V H N A G R S Q M A A A W L S H L A G   D R I E
UniRef90_F6B5M9           K K I L F V C T G N T C R S S M A E G L A R A I A E E L G L R G L T
UniRef90_T1AED8             M N I L F V C T G N S C R S I L A E A T F N H H L A P A G
UniRef90_K4KZZ2            M K I L F V C T G N T C R S P M A E G L A R L Y F P   E G Y E
UniRef90_UPI00037336E8    M K R I L F V C T G N S C R S P M A L L R D L A Q R E G M A L E
UniRef90_Q5P149           M K V L F V C T G N S C R S I L A E A T F N A L A P H G L E
UniRef90_D1B9V6           M R K V L F V C T G N T C R S P M A E A F L R S L C G   S S V E
UniRef90_UPI000470540A      M N I L V L C T G N S C R S Q M A E G Y L K L F A E G K A T
```

```
                              50            60            70            80
UniRef90_N1V0N1          V D S A G T T N W E A G R P I D H R A A A R L K L A G L A T S G H R A R Q F T W
UniRef90_F8KT70          V D G A G I S N Y H E G E H A H P P I I A L A K R H G I D L T P F K S K P I T Q
UniRef90_UPI000237DE28   V D S A G T G D W H A G A P P D R R A C A V A R R H G I D I T H Y R A R V V D S
UniRef90_UPI0004768533   V D S A G T T G Y E V G H P I D P A A R V L T A Q H I A S E D H V A R E W R H
UniRef90_R5XZR0          C Q S C G L G A F   T G D S A S P L A V W A A R M H G A D I S D H R S R Q I N Q
UniRef90_N6YX29          V R S A G I G A L V N H A A D Q T T Q Q V A S Q H Q V D L D T H R A Q Q L N L
UniRef90_F2ZJ48          C V D S A G I A A L S G S P I D P S A R A V L D A H C V P L Q P H A A R A V N H
UniRef90_UPI00034B5D9A   V D S F G T G D W H G G G M D P R A A S T L R V H G Y L T D H T A R Q F T P S
UniRef90_C6Y3B7          I Y S A G I E T H G V       N P K A I E I M K R D G I D I S G H T S     N N V
UniRef90_UPI000329D19F     S A G T G A L V D Y S A D A S A E K I S L Q N N L S L A G H K A K Q F T S
UniRef90_N6X4T4          V D S A G G S D E E R G N P I D R R A A R V L R E N G H D V P D H C A R Q V G L
UniRef90_Q4S716          I D S A A T S T Y E I G N A P D D R G Q A C M R R H G V A M S   H T A R Q W V I
UniRef90_A0A023CCR3      V S S A G L A A L   P G H P L E P I A S Q L L Q E H G H T P L A H K A R Q L T S
UniRef90_K2E1W1          A Y S A G T K P       S I V N P G A V K A M N E L G I D I S N H R S K H V D E
UniRef90_K4RIV6          V D G A G I S N Y H E G E Q A H P P I I A L A K R H G I D L T L F A S K P I T Q
UniRef90_G9ZCM3          L D S A G T H A H H H G A P D P R A R R V M R A H G M P I D D L R A R T F N D
UniRef90_K0YVA3          V D S A G V S D E E G N P V D R R A A R V L R E Y G H E V P N H R A R Q I R M
UniRef90_A0A023NQX2      L H S A G L S A V   V G D P M D A T V M R L L S E S G I D G S P H R A H Q P P M
UniRef90_C8XD05          V S S A G T G D W H G A G A H R G S V R V L A E A G Y P T E H T A R Q L T R A
UniRef90_UPI000463A2C4   I S S A G L G A L   V G H S A D E Y A A E I A G E N D I S L D G H I A K Q S K L
UniRef90_B4MBL7          V D S A A I E A W H L G A R P D D R A L S V L R Q N N I N Y H S C A R R L T P D
UniRef90_A0A022FUV6        R S A G L D P P V G A T A D P R A A S L L A M E G C T L E S H R A V T V D E
UniRef90_UPI00047B63E9   W K A A S A G S R P T G E V H P R S L S L L N R K G I S T A G C A S K S     W
UniRef90_C4ZJG3          T V A S A G I G A L V G H P A D E T T Q R V A L R H G I D L S P H V A R Q P E I
UniRef90_UPI000422FEC4   V H S A G L G A L   V G K P A D A N A V S V A Q A N D L S L D G H S A R Q L T M
UniRef90_UPI0002C43CB7   I D S A A T S T Y E I G E P L Y Y P G P N Y M K K H G I P M N H I A W Q V T Q E
UniRef90_A1WT74          V L S A G I E A H G Q       N P R A I A A M Q E D G V D I S D Q Q S T V L T E
UniRef90_A1W8V1          A W S A G S S P R D   N Q Q P H P L G L Q V L Q K A G V S T E G L R S K S W D E
UniRef90_G2IL64          A D S A G T G D W H V G N P P D L R A Q A V A L R H G I D I S G Y R A R Q A G D
UniRef90_B7K5J0          V T S S G L E A S R V         H P T A I E V M G E I G I D I T N Q T S N P L S E
UniRef90_V6PGZ7          V S A L             V D K P A D K V A S E V A Q Q H G F S L E G H S A R Q L T R
UniRef90_D7BD98          A Y S A G L E P         S Q I N P Y T V R V L H E L G L N S E G Q Y A K D L M T
UniRef90_N0AC08            M F S A G L G A L V G N P A D S M A V Q L L S E L G A D I S G H R A Q Q M N S
UniRef90_D3US06          V R S A G T C A V   T G D A I S E K S K Q I L L Q M D L E T D H Q A K K L D Q A
UniRef90_W9AHA8          V V Y A G A           G E R A N V N A V E V L N K R I Q L Q H V S Q P V T D S L
UniRef90_T0MKJ2          V N S A G V G A S   T G A P A T P F S I D T T K S F N I D I T N H K A R K P Q I
UniRef90_B7GMG8          V R S A G V F A F E   G S D A S Q H A K A V L A E K G I D V D H R A S L L T K E
UniRef90_UPI000428613D   V H S A G V E A H G L         N P R A V A A M Q E V G I D I S H H Q S K L I D P
UniRef90_W4BZT8          V R S A G V A A T S   G M P I S R H A E A V L R D H N V E G P P H S T Q L S S N
UniRef90_UPI0004023EDC   V I Q S A G L Y A M P G G Q P L S S L A A D A L T R R G V P L Q A H Q A Q P V T A
UniRef90_Q3K9H2          V T S A G L S A R   V G E G M E S T A R Q V L E E R G H S A E G F K A R Q L T A
UniRef90_W1TYU6          V H S A G L A P A   I G M P A A P L A V A E L S R R E I P F S G H T A K A L T R
UniRef90_M1ZA40          V K S A G I F A L D   G Q E A S K N A I E V L K S E G I D L R D H R A R I I Y R
UniRef90_A0A014MAX7      L H A V             V D H P A D D T A S S V A S E H D L S L E G H V A R Q L T M
UniRef90_G7VVU3          V R S A G V A A M E   G T P I S R H A E A V L R D H N I P D Q I T S T P L N G G
UniRef90_M5RHM4          I D S A G I G G W H Q G S P P H E G T R K L L D E K G I S Y E G M T A R Q I M D
UniRef90_UPI0004687F9F   V E V H G             L N P R A V E S M K E I D I D I S H N T S N L I D T
UniRef90_E3DYA4          V R S A G V F A S P N G K   A S P Y A I E A L F E K H I A L N H V S S Q L T E E
UniRef90_UPI000395800A   I D S A A T S A Y E T G S P P D C R G Q N C M K K H G I T M N H I A R Q I T K D
UniRef90_B3QQX2          V M S A G T       E P A S T I N P Y A I E A M N E I G I D I S T Q C P K L Y L G
UniRef90_UPI00028A3768   V K S A G I Y A T N G N Q M S I G S S T V L E E E Q M S M P H E S S S V T E E N
UniRef90_M2QLL7          V F S A G S H P K P V     H P G A V R A L A E R G I A L E H E P S H V D G L
UniRef90_UPI0003746283   I Y S A G V E T H G V       N P K A I A I M A E D G I D I S H H T S     N N I
UniRef90_UPI000472E825   V R S A G V Y A T D   G A F I S N H S R L L L E E N G M P V T P T S R R F T E Q
UniRef90_UPI00037DA273     Q I A S A G V E R H G       L N P L A V K V M A E R G V D I S Q H H S K L I D N
UniRef90_L8FXV2          V H S A G S K P       A G F V H P K A I Q V L K E I G L D I S S H T S K H M D T
UniRef90_UPI0002FEECC2   V V S S A G L S A V K S K P I E A T A A A V L E E H G H A V P E H I S T Q L T K
UniRef90_M4RHF1          V M S S G V S D E E Y G H P I D P R A V V V L R E R G Y E I P A H H R Q E I N D
UniRef90_UPI000405BA3B   A K S A G I T I V P G S F V T E N S A E L V K E E L N I D I T D R Q A I Q L N D
UniRef90_F2K3A1          V D S A G T A A Y H I G K S P D R R S I N E L R S V G I D L S Q Q R A R Q V V E
UniRef90_E6KSL8          V D S A G V S D E E R G N P I D P R A A R V L R D A G Y D V P D H R A R Q V S A
UniRef90_V5E5W1          L S A L             V G K P A D A S A I E V A N Q H G L S L I G H Q G K Q L T M
UniRef90_UPI00047D69AC   A Y S A G M S I E K N S I T S K H S A A V V M E N L G I D I S N R K A V G L T E
UniRef90_W8A5C9          V K S A G V S A A Y     G H A I S S G S K R V L E K E G I E L D H A S Q P L S D E
UniRef90_K8F0E7          V R S A G T R A L D G D A I S E N S R Q I L A Q M N L P T T H Q A K K V K K A D
UniRef90_S2XNZ2          V R S A G I Y A M D D G D I S E N A K Q V I R E A G I D F T H Y S R Q V S G E
UniRef90_F6DP73          F A S A G T L A L   P G D K A A N Q A I E I L A E M G I E L S Q H R A T L R E M
UniRef90_UPI00037B62FD   V R S A G N D P K P V     H E H A I T A M A E H G I D L S A A R S K H L E Q
UniRef90_Q0RKE8          V R S A G S A P       A E Q I N P A A A V A A M A E V G I D L T D Q A P K I L T V
UniRef90_UPI0003471D4F   V D S C G T G G W H A G H R A D A R M R E A A L E A G Y D L S A H R A R Q I E D
UniRef90_R5AGB4          L C Q S A G L S A V E G D P V S E N A V L A C R E I G V D I S E H T A R R I S G
UniRef90_A4A526          V R S A G T D V G A P G R R P D P R V V G V L E E M G V K A S G I R A R Q I K I
UniRef90_U3QTD6            T S A G L A P P V G A P A D P R A A R L L A G A G I S L R E H R A R T A I M
UniRef90_G4HCB3          V R S A G V S A L D G M P V S H H A E S V L R D Q D I R D E L V S K P L T S E L
UniRef90_B3EMM2          V A S A G T V C S Q K G E P P D S R A V S T A L A H G I D I S A Q R A R C I H D
UniRef90_UPI00037D140E     L E A S S S G L E A S R V N P T A I A V M S E I G I D I G N Q T S N P L S D
UniRef90_F1S9H9          I D S A A T S T Y E L G N P P D Y R G Q A C M K R H G V P M S H I A R Q I T K E
UniRef90_UPI00047E20C7   V W S A G L G A L   V G E P A D P F S V Q V A A A H G L D I T A H R A Q Q V T S
UniRef90_G2DUT1          L Y V             P A P R D A D F Q A I K T A L H G V I I A G H V A R Q L T K
UniRef90_UPI0003B389D6   V A A Q S A G S K P A G   R V H P R A L A V L K E A G L S T E G L S S K S W D N
UniRef90_M5QVE2          V R S A G I F A F D G S D A S Q H A K A A L A E K G I H I D H R A T L L S K E H
UniRef90_T0CIZ8                F Y S A G T K K H G L N P Y A I K V M K E V G V D I S T H T S N T T D E
UniRef90_UPI000465B24C   V A S A G L E A S R V N         P R A I S V M Q E V G V D I S A Q Q S T R L D P
UniRef90_UPI0004266F18   V K S A G L F A P E N G K A S L Y A V E A L F E K N I A L N H S S A R L S R E K
UniRef90_X0MZT2          V R S A G S A P       G D T V N P A A A V E A M R E V G I D I S A E K P K I L T V
UniRef90_F6B5M9          F A S A G T L A W   P G D K A A D N A I A T L A E M G I E L S G H R A T Q L T P
UniRef90_T1AED8          W K A M S A G S H P T G Q V H P R S L A L L E Q E G I P T T G L S K A K S W D N
UniRef90_K4KZZ2          L F S A G I Q A L D   G D P V S P Y A G E I L Q E K G I D A R R Y R A V Q K D T
UniRef90_UPI00037336E8   V R S A G V S T I D G L P I S A N A A E T L R R R E I R H G A S S R A L T A E A
UniRef90_Q5P149          A I S A G S R P       A G Y V H P R A A L L A R E G I S T E G L S K S W D G
UniRef90_D1B9V6          V D S A G L L T V D G L S A S P L A V E V S R E F G V D I S H R S S C L Q D
UniRef90_UPI000470540A   I Y S A G V E T H G L       N P G A I A I M K E D G I D I T N H T S     N N L
```

```
                                                    90              100             110            120
UniRef90_N1V0N1          Y R E R D L I L A L D L D H Y E Q L R R D A P D A K V R M F R S F D P K E P S A
UniRef90_F8KT70          N L A N R H D W I I A M D T S N V K S L G T L G I T H P H I Y K L G D F G L G G
UniRef90_UPI000237DE28   F D R F T H I I A L D H A N L R H L L D M H P A G S R A R V L L D H V P G R T G
UniRef90_UPI0004768533   E W F A G R D L I L D V D H F G W L Q E G A P D A S L E K V R M L R S F D P P Q V
UniRef90_R5XZR0          Y I F N G T M V C M T K A H K Q A I M T L N P K F K V I V                     P E
UniRef90_N6YX29          E R W A D L I L G M E K H H L D F T N D L D P T T R G K T F L L G H W         N K
UniRef90_F2ZJ48          E H Q A E L I L V M E R H P D L L R F A P A V R G R T F S I G Q W Q G P L D
UniRef90_UPI00034B5D9A   L L A E R D L V L A D L D N L E D L R T V V G E D R L R L F R S F T P G A G P N
UniRef90_C6Y3B7          N E Y T G I E F D Y V I T V C D N A K E S C P Y F P T N V K L H Y N F P D P A K
UniRef90_UPI000329D19F   E R S Y D L I L V M D K T H I E E I G K L A P E A R G K T M L F G H W M N     H
UniRef90_N6X4T4          H E E W D L I L A M T G H H L A A L N R L R G Q D R S D L R L F R D F D P P G D
UniRef90_Q4S716          D S G A T S D W N T G H R D L K K K A K S V K N C N A K I E L L G L Y D P Q K Q
UniRef90_A0A023CCR3      E A D A D L V L V M E Q R H I E G V L N L A P E A R G K V F L L G K W Q     Q N
UniRef90_K2E1W1          F L G E G M D Q V I T     V C D N A K E S C P V F P A K T Y T N W S F Y D P A D
UniRef90_K4RIV6          E N K F D C I V A M D E S N V K A L K D L   G I S H P H V C K L G D F   G L Q R
UniRef90_G9ZCM3          F D R F D R I L V A D R R N Y Q D V T A L A R D D A Q C N K V G F M L E T L P D
UniRef90_K0YVA3          S E L A D W D L I L A M T R A D A A S D S R G S A G P D I R L F R D F D P P S D
UniRef90_A0A023NQX2      L I Q A D L V L G M E K S H V D A M V E L A P A A R G K V F L I D K W V D     G
UniRef90_C8XD05          D L A E I D L V L A A D R D H R A L V K R M P E R D K V R L L R D F D P D A D G
UniRef90_UPI000463A2C4   C R E Y D L I L V M E R K H I E A V C N I A P E S R G K I M L F G H W I G     G
UniRef90_B4MBL7          F E K F D Y I L G M D Q S I L A S L K L L Q P Y Y A K S Q L L M L G D F K P N E
UniRef90_A0A022FUV6      S L I A V S D L V M D N E Q R D E L E R L Y P Q A R G R T Y R L C E F S H V
UniRef90_UPI00047B63E9   D N L S V K P D I V I T V C A S A A G E C P A Y L G K V M R H W G V E D P A H
UniRef90_C4ZJG3          T R W A D L I L V M E K H H L E Y A T R L D P S A R G K I F L L G H W     D K
UniRef90_UPI000422FEC4   C R E Y D L I L T M E R R H I H A L C D I A P E M R G K V M L F G H W D G E N
UniRef90_UPI0002C43CB7   D F T F D W I L C M D E S N M R D L N R K D N Q V K N C E A K I E L L G S Y G Y
UniRef90_A1WT74          A M L A E A D V L V T V C G H A D     E H C P V V P G S V V K H W P L P D P A R
UniRef90_A1W8V1          F A A P G A P T M D C D N A A G E V C P I W P G H P A T A H     W G F A D P S E
UniRef90_G2IL64          F E R F D L I Y A L D H S N L E A L R G I A P R A R A R L S L L L D I V P G R G
UniRef90_B7K5J0          F         T A E D Y D A V I S L C G C G V N L P Q E W V L   R E I F E D W Q
UniRef90_V6PGZ7          C Q D A D L I L V M E K G H I S A V T A I D P G A R G K T M L F G H W Q G     E
UniRef90_D7BD98          F W G G K Y H F T Y L I T V C D K A E A C P F P F A T R R L Y W P F E D P S S
UniRef90_N0AC08          E L R A D L I L V M D N D Q R G E V Q L L Y P Q A S G K V F R L G E L V K M
UniRef90_D3US06          D D W A N E I Y A M T K A Q V Q E L Q M H P N S S S K I K L V T D         D N
UniRef90_W9AHA8          L H W A D V V M T M T T Q H K Q S L I M T F P N Y Q E K Y F T L K E Y V S E S D
UniRef90_T0MKJ2          L R E S D L I L V M A P E H Y F Y I Q Q L D S G L S H Y L L K A F P S R E M
UniRef90_B7GMG8          H D W A T Y V L T M T E S H K Q H V L S R F P E A E G K T F T L H E F L G D S
UniRef90_UPI000428613D   D L L N Q A D Y V I T L C G     D A N D R C P R T P A H V K R L H W G F E D P A K
UniRef90_W4BZT8          L V W A D L V L T L T R S H K Q H V M Q V F P D S V H K T Y T L K E Y V E D D E
UniRef90_UPI0004023EDC   E A W A D L I L V M T A A H E W D L L R R F P E A A G K T A R L G R F L A D A P
UniRef90_Q3K9H2          D I V N E S D L I M E K Q H V N Q V L K I A S H A R G K V F L L G K W Q S     E
UniRef90_W1TYU6          D M L Q N S D V V M T Q S Q R D L L R R S F G E L E K K I Q T L G E W S G L     G
UniRef90_M1ZA40          D E E A D L I L T M G I S H K R V L L S K F D F I Q G K I Y T L K E Y A Y G K E
UniRef90_A0A014MAX7      C R D Y D L L L V M E K G H I D Q I N R I N P S V R G K T M L F G H W     L N Q
UniRef90_G7VVU3          L E W A D L I L T L T Q G H K Q H V I Q R F P Q T V G K V F T L K E Y V E D R D
UniRef90_M5RHM4          K D I T T Y D Y I I A M D
UniRef90_UPI0004687F9F   D Y                 F N S C D F V V T L C G D A K D K C P M V P Q G V T H L H
UniRef90_E3DYA4          D E A A D L I L T M T N V D H K Q L I I N Q F G S H S D K V F T I K E Y A A G V D
UniRef90_UPI000395800A   F Q T F D H I L C M D E S N L R D L I R
UniRef90_B3QQX2          Q I F I N Y L I I V C S K A N D S C P R V W P G A N Q N N R L Y W P V D D P A E
UniRef90_UPI00028A3768   V R W A D L I L T M T T S H K R A F M D V Y P F A A D K T F T L R E Y V R N E V
UniRef90_M2QLL7          R H R R F H W V I S L C D R V R E V C P E F P G H P R V V H W S L P D P A E E T
UniRef90_UPI0003746283   V E Y G D I D F D F V I T V C D N A K E R C P Y F P T N A K K F H H F P D P A K
UniRef90_UPI000472E825   D E W A D L I L T M T V S H R E T L R N A F G N G S D K I L T L K E Y V G A A Q
UniRef90_UPI00037DA273   D Y L Q H S D M V V T L C G     D A R D K C P M T P P T V A K R H W P L P D P A Q
UniRef90_L8FXV2          F D S Q I A T V I T V C G N V D Q V C P F Y P G Q V N R H H     W D F D D P A H
UniRef90_UPI0002FEECC2   I N E A D L I L V M E Q H H I N G V L S L A P E A R G K V F L L G K W Q D     N
UniRef90_M4RHF1          S D L F L P M T A S H M R A L V R L L P P A K R A E V H M Y R S F D P N R E D Q
UniRef90_UPI000405BA3B   S M N S D V I L T M T N Y G R D F I K E N Y P R Y K D K V F S I C E Y A G V K G
UniRef90_F2K3A1          A D F Y Q Y D W I M D A S N L Q N L K V I M P D A S A Q V V M F G E F A E Y V R
UniRef90_E6KSL8          S E Q W D L V L A M T G R H L R A L Q R L A P T R G P L I C M Y R D C D P E G S
UniRef90_V5E5W1          C R Q Y D L I L V M E K K H I E A V C R L A P E V R G K T M L F G H W     L A Q
UniRef90_UPI00047D69AC   S M L S K A D L I L T M N Y M S S I I K D Q F E S I K D K V H P L N L Y V N R N
UniRef90_W8A5C9          L Q W A D K V L T M S S A H K R I V E E R Y P     Y Q N V S T L Q E A A G R E G
UniRef90_K8F0E7          I D W A D Q I Y V M T Q N H Q A E L K S L F P K A S D K I Q L I S E         D K
UniRef90_S2XNZ2          D R W A D L V L T M T S A H K Q L I M Q A F P F A A D K I F T L K E Y V R P Y G
UniRef90_F6DP73          I M E A D L I L T M T A S H R R Q V L S M M P E A A D K V H I L G Q Y A G V P G
UniRef90_UPI00037B62FD   F K D E R F D Y V V T C D R V R E V C P E F P G G P Q P V         H W S M P D P
UniRef90_Q0RKE8          G A V E D S D V V I T M G C G D A         C P I F P G T R Y E D W K L D D P A G
UniRef90_UPI0003471D4F   F Q R F E R V L G M D Q A N L R D L T A R C P L A L R H K L G L F L P A A G I D
UniRef90_R5AGB4          E E P V W D L Y F P M S K T H G Y I L A Q A Q V P Q T K I Y I P K Y I A D P F G
UniRef90_A4A526          L A Q A D Q I L V M E R S H L D A I V E R F P D A Q E R V R L     L D A Q G
UniRef90_U3QTD6          V N A A D L I L V M D N E Q R D E L E F L F P Q A R G K T F R L C E F     L K
UniRef90_G4HCB3          V E W A D L V L L T Q S H K Q Y A I R Q F P H A A D K M H T L K E Y V E D D S
UniRef90_B3EMM2          M D R F T K I F V M D V D N Y H D V I R Y G N S M S E P V T M V A D Y L A D S A
UniRef90_UPI00037D140E   F E A K H Y D A V V S L C G         C G V D L P P E W V T R E I F E D W Q
UniRef90_F1S9H9          D F T F D Y I L C M D E S N L R D L N R K G N Q V K N C I E L L G S Y D P Q K Q
UniRef90_UPI00047E20C7   W M C Q Q T E L I M E Q S H K S Q L E Q Q F P M V R G K V F     L G Q H G Q
UniRef90_G2DUT1          D M C A D L I L V M E P S Q I D S V A E I A P S S R S K T M L F A Q W M A L
UniRef90_UPI0003B389D6   L T E K P D A V I T L     C A D A A G E A C P L Y F G K V V R S H W G M P D P A
UniRef90_M5QVE2          I D W A T Y V L T M T E S H K Q H L A R F P E A E G K T F T L H E F L G     V D
UniRef90_T0CIZ8          L D V K M D I V I T V C S D A N E N C P Y F P G G K I I H I G F D D P P R L T K
UniRef90_UPI000465B24C   S A L A Q A T M I V T     C G D A R D H C V T P A T V T R E H W P L P D P A
UniRef90_UPI0004266F18   V E W A D L V L T M T E Q H K L L A R Q E Y S G S K D K I L T L K E Y I K G E T
UniRef90_X0MZT2          D A V K G A D V C I T M G C G D A         C P I F P G K R Y L D W         K
UniRef90_F6B5M9          E L I A E A D L I M T E G H R R Q V L N L A P E A E N K V F T L S S Y A G V A G
UniRef90_T1AED8          L P E T P D I V I T V C A S A A E     E A C P A Y L G P A L R H W G V E D P A H
UniRef90_K4KZZ2          L A T A D L I L T M T K A Q K V L F Q D K I M Q L G E W A G L         D
UniRef90_UPI00037336E8   V A W A D L I L T M T A G H K R H L L E R Y P Q A V D K S H T L K E F V A R E G
UniRef90_Q5P149          L P V T P D I V I T V C G S A A     S E T C P A Y L G P V V R H W G V E D P A Q
UniRef90_D1B9V6          E L V G D L V L G M S R S H K Q R G I T A L G V H L F G E L V E D P A Q
UniRef90_UPI000470540A   D E Y I D I A F D Y I I T V C D N A K E R C P F F P G K A R L H Y N F F D P S K
```

```
                                                    130             140             150
UniRef90_N1V0N1         Q G I Y D P W F G D D F E A S W D M I S S A V P G I V D H V R
UniRef90_F8KT70         V D I P D P Y Q E K D L E H V Y D L I Y Q C V T H L L K
UniRef90_UPI000237DE28  H A V A D P Y Y G G D F D T T W R D V A A G A A A L V D R L R R D G S
UniRef90_UPI0004768533  A D R E D P W Y G G D F D N T W T L I K S A I P G I V E H V K
UniRef90_R5XZR0         P E I S D P Y G G D E Y S A C A D Q I E S F V S R L L D V L T A E I K
UniRef90_N6YX29         A E V P D P Y R Q E A H Q L A Y E I I S E A V D Q W V E K I
UniRef90_F2ZJ48         P D V A D P Y R R S A F E Q T Y A Q L S R C I D D W L P H F Q S E
UniRef90_UPI00034B5D9A  P E V P D P Y Y G D G F T A V L N M V E S A A K G L T G E L V   V R L R G
UniRef90_C6Y3B7         A K G N D E E V M E Q F R E V R E M I R K Y A Q N F V N E N L K N
UniRef90_UPI000329D19F  R E I P D P Y R K E A F A S V Y Q L I K L A G D S W I E K L
UniRef90_N6X4T4         M D L P D P W Y G D D F V E T L E V I E R T T P A V L E H L R
UniRef90_Q4S716         L I I K D P Y Y G S D F E T V Y E Q C V R C C K A F L E E
UniRef90_A0A023CCR3     R E I K D P Y R Q G A F V H A Y A L I E Q A A E A W A Q R L V
UniRef90_K2E1W1         A I G T E E E I L A V F R Q V R D E I K H K I D
UniRef90_K4RIV6         V D I P D P Y Y T D D F E K V Y A L I E L G V Q N L L D G L
UniRef90_G9ZCM3         S E L P D P Y L G E D F E R T F T L L E Q A L R
UniRef90_K0YVA3         H D V P D P W Y G G D F V E T L E T I E R T T P F I V E E L S K
UniRef90_A0A023NQX2     R D I P D P Y R Q H H F V R A Y E M I R R A V D S W V G Y L
UniRef90_C8XD05         D E V P D P Y Y G Q G F V E V L T M T Q A A V P G V I A E I R R
UniRef90_UPI000463A2C4  Q D I P D P Y K K E A F S F V F K Q L N D A T R E W V R A L N R
UniRef90_B4MBL7         R I I E D P Y Y E M G F Q K I Y E Q C T Q A C G N F L K Q A R Q D
UniRef90_A0A022FUV6       D V P D P Y G G S Q F V L V L G L I K Q G V E S W S A H I Q
UniRef90_UPI00047B63E9  A T G T D S E I D A A F E T A Y R I L R A R I E A F L A
UniRef90_C4ZJG3         A E V P D P Y R L E N H Q L A Y D I I A H T V D Q W I G K L
UniRef90_UPI000422FEC4    E I P D P Y R R E A F E A V Y S L L D R S A R K W A Q A L
UniRef90_UPI0002C43CB7  H P Q K Q L I I G N D F E T V Y Q R C V R C C K A F
UniRef90_A1WT74         A E G S E E E I A S A F R E V R D E I K G R V R K L L A
UniRef90_A1W8V1         G D A P D S E K L E A F R Q T L H L I K R R L D L L I N
UniRef90_G2IL64         Q A V A D P Y F G S G F E E S W A D V
UniRef90_B7K5J0         L D D P D G Q P L E T F H R V R D E I K E R V A A L I E K L
UniRef90_V6PGZ7         S E V P D P Y R R E A Y E H V Y Q L L V R C A D G W A K K L
UniRef90_D7BD98         F E G S D E E K L A K F R Q V R D Q I A A K I R E W V R E
UniRef90_N0AC08           D I P D P Y G R R A F E H A L H L I R E G I D T W V P R I R
UniRef90_D3US06         S D I P D P Y G G E Q Y E I T Y Y E L K S A I E H F L
UniRef90_W9AHA8         K K V W N E L K Q A D Y E E K R S L F I Q E N Q H K L D N I R L D K E L R G
UniRef90_T0MKJ2         D D K Y D P L G G D E Y Q K C F Y E L E E Q L R R I L D W S L R K G Q L K
UniRef90_B7GMG8         K D V I D P F G G S
UniRef90_UPI000428613D  A T G T E A E I Q A K F R E V R D A I R D K I E A F L Q E I E
UniRef90_W4BZT8         Q V L S D V Q E L D S L F A T L E M K R A L G Q E I L A S E R E R A
UniRef90_UPI0004023EDC  C D I V D P F G G A D Y E A C A D D L S K A V R G L I E H L A T K G S L E
UniRef90_Q3K9H2         R E I Q D P Y R Q G A F I H A H A L I E D A V S S W A Q R L A R
UniRef90_W1TYU6         G E I P D P F G G D A   S L Y A Q C A S S I W E H L A A A K Q R L
UniRef90_M1ZA40         E D I D D P F G G A Y D K A K V E I K E A L K E M V K Q W K
UniRef90_A0A014MAX7     Q E I A D P Y K R D A Y E A V Y V L L E N A A Q K W V N A L S R
UniRef90_G7VVU3         S V L N D V Q E L D G
UniRef90_M5RHM4
UniRef90_UPI0004687F9F  W G L P D P A Q A T G F R E V R N Q I E Q K I I S F S E
UniRef90_E3DYA4         E D V T D P F G G
UniRef90_UPI000395800A
UniRef90_B3QQX2         A T G S D K E K L A A F R K A R N E I K E K L E A W L A
UniRef90_UPI00028A3768  G D I P D P Y G G S
UniRef90_M2QLL7         D D A G G A Y P   A F R R L A D E L D R R I G F L T A R I D E
UniRef90_UPI0003746283  A T G T E E E V I N E F R A V R E Q V K A Y A E N F V K E
UniRef90_UPI000472E825  Y D V H D P F G G G V Y Q Q T F E E L S D Q I D V L A R K L M G E Q K
UniRef90_UPI00037DA273  A T G T D E E V L A V F R Q V R D D I E G R V K E L I Q T L
UniRef90_L8FXV2         A Q G S E E Q V L A E F R R V R D E I R K V F E A Y A A G L R E
UniRef90_UPI0002FEECC2  R E I N D P Y R Q G A F V H A Y A L I D T A V N A W A Q R I K R
UniRef90_M4RHF1         I D L V D P W Y G E D F N I A I D Q I E Q V A P Y I V D W V S E Q
UniRef90_UPI000405BA3B    E V T D P Y G S S V Y Q K I Y K E L K G I M P L L I D K L K K
UniRef90_F2K3A1         L E V E D P Y Y G D D F H S M R L H L T E I A E S F F D S I
UniRef90_E6KSL8         G D V P D P W Y G G D F L D T L K V I E R V T P R L L S I V S Q G G L R
UniRef90_V5E5W1         S E I S D P Y R R E A F E F V Y H L L N D S A Q K W V Q A L S R
UniRef90_UPI00047D69AC  G D V S D P Y G G D I Y K N T Y R D M E L S I K L L I K K L R E D K G I
UniRef90_W8A5C9         Y D I Q D P F G G E D Y E Q T A K M I K K A V K D F L R Q
UniRef90_K8F0E7         T D I P D P Y G G E Q Y E I T Y Y E L K S A I E R F L
UniRef90_S2XNZ2         H D V S D P F G G D V Y R Q T F Q E L T Q L T N E L H S K L N E E
UniRef90_F6DP73           D V P D P F G G E Y R R C A G N L Q A L I R K V L D R L K T D
UniRef90_UPI00037B62FD  S K E P D G Y P   A F Q R T A T E V D S R I R F L L H R I L
UniRef90_Q0RKE8         Q D I   D A V R P I R D E I R A R V D R L L A E L L
UniRef90_UPI0003471D4F  D E V P D P Y Y G E D F R H V I A L A E R G A D G L L A A L
UniRef90_R5AGB4         Q D   L D V Y R E V R D K L K S Q L E I F
UniRef90_A4A526         A D V P D P Y F G N G V R A A V E H I D R L T R E F A Q T L S E
UniRef90_U3QTD6         S D V P D P Y G M S M F T I V L E L I R Q G I A S W S A Q L E
UniRef90_G4HCB3         K V L A D
UniRef90_B3EMM2         V D I E D P Y Y G D D F M S V Y Y L L S E A L G N I Y K E L
UniRef90_UPI00037D140E  L D D P D G Q P I A T F Q R V R D E I R D R V E Q L I F R L
UniRef90_F1S9H9         L I I E D P Y Y G S D F E A V
UniRef90_UPI00047E20C7  F E I A D P Y P R E A F D T A F A A I S Q G V A D W V P R I R Q
UniRef90_G2DUT1         K S I P D P Y M Q S E F E L V Y Q H L E E A A E L W S N K L S N Q
UniRef90_UPI0003B389D6  K V E G D E A A V N A F A E T F A V L R R R I S A L V K Q L E A E
UniRef90_M5QVE2         K D V I D P F G G S
UniRef90_T0CIZ8         D L S D E E E I L K V Y R R V R D E I K E T I L T L E E R I
UniRef90_UPI000465B24C  Q A T G T P E Q Q A V F R A V R D E I R Q R V V A L A R Q L A
UniRef90_UPI0004266F18  G D I A D P F G G S
UniRef90_X0MZT2         L E D P A G Q G I E A V R P I R D E I K T R I E T L I A E I D A E A
UniRef90_F6B5M9           D I A D P F G Q   P L E V Y K H C A E E L Q S L I R A L A K F S N L E
UniRef90_T1AED8         V T G T D A Q I Y A A F I T T Y H L L R S R I E A L L A
UniRef90_K4KZZ2         K E I S D P W L G E T Y R F C A E E I E E M I K A
UniRef90_UPI00037336E8  E V L S D   I E E L E R L Y T D L H M K   Q A L G G Q L T E Q E R A R
UniRef90_Q5P149         A S G S D A R I D A A F E H A Y R T L R A R I E A F F A
UniRef90_D1B9V6         V D V P D P F G W G E K E   Y R S V A A L I W D W S N E L A R L K P W E G
UniRef90_UPI000470540A  V K G T D E E I H A A F T K T R N Q I K E Y C K N F V E K
```

```
UniRef90_U5E7Q8         M S T K P S V L F V C V H N A G R S Q M A Q G F L S H L A G       D D I E
UniRef90_N9M5F9               K H I L V V C V G N I C R S P M A E Y L L K Q A L P E R Q I H S A G
UniRef90_UPI0003661A02       M L H I L F V C T G N T C R S P M A E G L L R K L A K E R G I D   V E
UniRef90_D6SMH4         M S E K K N I F L C T G N S C R S Q M A Q G W T N A L       Q S E N F Q
UniRef90_S3MLB7               S V L V L C V G N V C R S P M A V A M L H E R L Q A T Q V R
UniRef90_F8X0M5             M K I L I L C T G N S C R S Q M A H G F L Q S F D P K L L V Y S A G
UniRef90_B3QLI2         M S N Q S I L I L C T G N S C R S Q M A E G F L K A Y D P         S L E
UniRef90_UPI000370A1F1           S V L F V C V H N A G R S Q M A A G F L R H L A G         D R V E
UniRef90_R7K9P6             M K K L L F V C S G N T C R S P M A E F L F R R F L D S E D I D N V E
UniRef90_F4XUW6             M K Q I M F V C K R N S C R S Q M A E G F A R T L G               E
UniRef90_I4NB61                 R V L I V C V G N V C R S P M A A A L L R Q R G G R R L E
UniRef90_S6E9N9                                 M A E Y L F R E K V K Q A G L D K I L
UniRef90_UPI00047C1C4F           S V L F V C V H N A G R S Q M A A G W L R H L A G       D G V E
UniRef90_K9Z0G3            M K N L I F V C K K N S C R S Q M A E G F A R T T I     C D G K I K
UniRef90_D9TFP9           K P R V A F V C V G N S C R S Q M A E G F A K H Y G K       D L I E
UniRef90_B1BZ81                                 M A E F I F K D L V K K H R L E N F Y
UniRef90_UPI0003B5320C       P Y T V M T V C T G N I C R S P M G E I V L R N E F A K R G L D R V R
UniRef90_C0SH83          K P I S V L F V C L G N I C R S P M A E A I F R H L T A S L H A T P I T
UniRef90_F0IG09        M I P S T R I L M V C L G N I C R S P L A E G V L R S M L D K     D F F E
UniRef90_UPI00047C0CEE      T K K T I Y F L C T G N S C R S P M A E G W A N K L L G         D E W E
UniRef90_U5NE28              M N I L F L C T G N S C R S I L A E A T F N H L A P       A G W K
UniRef90_UPI0003B49CAB        Y H V L F I C T G N T C R S P M A A A L M K H H Y P E V E V A S A G
UniRef90_C8X3R7        M S E Q L R L L F L C T G N A C R S Q M A E G W A N H F F P D
UniRef90_UPI0002D9DE32          R I L V V C M G N I C R S P L G E A S L K A I M P N K A V C S A G
UniRef90_UPI00016C51E5  M A G Q K R V L F V C V E N S N R S Q M A E A F A R         L H G G A
UniRef90_K6WYU5                S I L F V C T G N I C R S P I G E R V L T G L A D R M R A D G V T
UniRef90_UPI000051024B    K M A S V V F V C T G N I C R S V T A E R V L Q H H L E L N D A E A V
UniRef90_J4J988        E K V Y N V L F L C T G N S A R S I M A E A L L N T L G K         G R F H
UniRef90_O52787               K N I V V C I G N I C R S P M A E Y L L K Q N Y P Q L T I H S A G
UniRef90_A8S8U5             M K K V L F I C H G N I C R S P M A E F V M K D L V E K A G L S Q F E
UniRef90_A2E677             K S V L F V C T G N V C R S P V A K V L A N K F T N       G N I K
UniRef90_F2NJ13        M E Q M P N V L I L C T G N T A R S Q M A E A F L K K Y A G       E S L E
UniRef90_W4VIX3             K K T I Y F L C T G N S C R S Q M A E G W A K E H L G S E W   E
UniRef90_H0Q4L3              M N V L F L C T G N S C R S I L G E A T F N H L A P A G
UniRef90_M1WRP2              M N I L F L C T G N S C R S Q M A E G W A K K L K D       E S F H
UniRef90_UPI0003B59196      M N I L F L C T G N S C R S V I A E A L F R S M A P A G
UniRef90_E2B005        M V Q K K K V L M V C L G N S C R S P M A E A V F Q D Q V Q K M G L D F W E
UniRef90_A9BIG9             N K I K V L F L C S R N S A R S Q M A Q A F L K K Y G N     D K F E
UniRef90_K1Z9F7        S S Q T S V L F L C S A N A A R S Q M A E A F L K H M A G       D K F Q
UniRef90_K6WNZ5           G K P T V L F L C T H N A G N A M A L G Y F T H L A G D N A V A W
UniRef90_Q1GUY8                    I L F L C L G N I C R S P L G E G A A R A A F A A A G I D   A H
UniRef90_E3EQH0        Q H P Y T V M T V C T G N I C R S P M A E I I L R A E F E S R G I D R V R
UniRef90_W5W0V6                                 M A A L V F G E Q L R T A G L D V V D
UniRef90_D6TS32                 R V L F L C T H N S A R S Q M A E G L L R A L G G       E Q F E
UniRef90_U3H8B2              M R V L F M C T A N S C R S I L S E A L F N H L A P       P G F E
UniRef90_A0A024Q716    N K K T I Y F L C T G N S C R S Q M A E G W A K F Y L S         D D W E
UniRef90_D2Z742              M R I L F L C T G N S C R S Q M A E G W A R H         T W G D R Y T
UniRef90_UPI0004693E30     M K R I Y F L C T G N S C R S Q M A E G Y A K K F L D T     S L Y E
UniRef90_R9IC77             M K I L I L C T G N S C R S Q M A H G F L Q S F D K K L D V
UniRef90_UPI0003B6256E      M A E L L F V C W G N I C R S P M G E V I A R N W A R Q Q R I D   V D
UniRef90_UPI0003B4F39E  N K K N I L V L C T G N S C R S Q V A E G Y L R Y F A G       D K A N
UniRef90_UPI0003B4A801       K N V L V L C T G N S C R S Q I A H G Y L K Y F A G       D K A N
UniRef90_UPI00047A6739       M H L L F V C T G N T C R S P L A E T I A R R M I A D R H L A G I T
UniRef90_UPI000381F775       K R I L I V C R G N I C R S P T A Q Y L F Q S R M       N L R G V E
UniRef90_A4AE96            M K D I L V L C T G N S C R S I L A E A I I N H L G K E R
UniRef90_M5RFG3                         M G N I C R S P A G E A V M K R F A Q E Y G V D     M E
UniRef90_X4ZQJ5             M L H I L F V C T G N T C R S P M A E G L M R K L S A E R G I   N L E
UniRef90_M9P0Q5               N I L I V C M G N I C R S P T A E R L M Q R V F P K K R I H S A G
UniRef90_F6IEW4        T P L N V L F L C T G N S A R S I L A E A I L N H         E G K E H F R
UniRef90_F0G3G4             M K N I L I V C E G N I C R S P M A Q G L L A S R         L S T V R
UniRef90_D0LPJ6                 S V L F L C V A N S A R S Q M A E G L A R H L F A G     D A V R
UniRef90_A6EJ27            M K N I L V L C T G N S C R S Q L A E G Y L R N Y A E     G K A N
UniRef90_Q0YQ07            K K S V L I L C T G N S C R S Q L A E G Y L R S F D T N L E V F S A G
UniRef90_UPI0002485966        K N I L V V C V G N I C R S P M A E F F L K D Q F P H L S I E
UniRef90_S2ZT40        M T R P A R V L M V C T G N I C R S T M A A H A I L E Q A A A A R A G V D V V
UniRef90_UPI000400F971 M N N K P L V Y F L C T G N S C R S Q I A D G F L K A L G S     D K Y E
UniRef90_N1WCZ7        M E T P N I L V L C T G N S C R S Q I A E G W L R F Y A G N R     A H
UniRef90_UPI00039AF437     M K V L I L C T G N S C R S Q M A E G Y A K F L Q S F A P S W T V E S A G
UniRef90_L5MT04        M E N K K T I Y F L C T G N S C R S Q M A E A W G K K Y L G H A W     N
UniRef90_Q1J0C6             M I R V L I L C T H N S A R S Q M A E A L V R D A A R R D G L D L E
UniRef90_B4K592             K K L L F V C M G N S C S S P M A E T I M Q T L M V K T S L   Y W E
UniRef90_UPI0002FC59A1  M D K K K T I Y F L C T G N S C R S Q M A E G W A K K Y L G D E W I
UniRef90_A4SF91        M D K K K T V L I L C T E N T A R S Q M A E G L L R N M A G       D R F E
UniRef90_W2EUW5                    V L F V C T G N S A R S P I A E A L L R H H T S G G V T
UniRef90_UPI000466E4D4      M K K V L I M C T G N S C R S I I G E A V N A K L E G V E A K S A G
UniRef90_W3KQC0              K N I L V V C I G N I C R S P M T E Y F L K Q E Y P Q L N I E S A G
UniRef90_N1V7G9        M T S K P T V L F V C V H N A G R S Q M A A G Y L R H L A G       D R I T
UniRef90_E4TXK9             M L K V L F V C V H N S A R S Q M A E A F F N Q Y A A N T D       C
UniRef90_D3PE89            K K K L L F L C T G N S C R S Q M A E G Y G K I F L G       D K Y E
UniRef90_UPI0003B6887B       M K V L F M C T H N S C R S I L S E A L F N H L A P A G F L
UniRef90_I0ANJ1            K K R I L I L C T G N S C R S Q M A E G F L K S F D R E         L E
UniRef90_X5KVG6        M K K P T V L F L C T H N A G R S Q M A L G F F N H L A R G H A L G W
UniRef90_A9DNR2             M K N V L L L C T G N S C R S Q M A G Y L E H F A Q K K       A S
UniRef90_O28910            M K V L F V C I H N T A R S V M A E A L F N A M A K S W K A E S A G
UniRef90_K0EWU0                S V L F V C V H N A G R S Q M A A A F L T H L A A       G K V E
UniRef90_B8HV07            M K R V M F V C K R N S A R S Q M A E G F A K Q L G A       G K I A
UniRef90_UPI000237C09E       M K I L I L C T G N S C R S Q M A H G F M Q S F N K D L Y V R S A G
UniRef90_UPI00047A3352  M S T K P S V L F V C V H N A G R S Q M A A G Y L R A L G G       D N V E
UniRef90_G2DVA5                           M A E Y V C R H I A E E S G I H R I Q
UniRef90_K0NW85        M T N K P K V A F I C V H N A C R S Q I A E A L G R H L A G       D V F A
UniRef90_B0TI67             M F T L L F V C T G N S C R S P M A K A I A D A L L A E M G Q A A Q I
UniRef90_I4JGA6        M S Q K R V L F L C V A N S C R S Q M A E A L L R H         T D S E H F E
```

```
                              50            60            70          80
UniRef90_U5E7Q8       V R S A G S A P     G D A L N P A A V E A M A E L G I D I T A Q A P K I L T P
UniRef90_N9M5F9       I       A A M V G Y P A D E K A Q R C M Q S I G L N M Q A H R A K K G N M
UniRef90_UPI0003661A02 V R S A G V S A I S G T S I S R H A A A I L R D E G V N D H I I S S Q L S A E T
UniRef90_D6SMH4       A F S A G V     K K S S V D P M A V E V M G A G I D L S G H Y S K L I E E
UniRef90_S3MLB7         I Q S A G I A A L S G S S I D P T A H A V L Q S H R V Q P R R H A A R Q M S R
UniRef90_F8X0M5       T K A S G           K V N P K A I E V M H D A G I D I S H H T S D S I D R
UniRef90_B3QLI2       V H S A G T R P S       E M V H P L A V A A M E V G I D L S S H R P K S L N A
UniRef90_UPI000370A1F1 V R S A G S L P       G D R L N P S A V A A M A E L G I D I S D Q R P K V L T P
UniRef90_R7K9P6       V T S C G I K A A E G A P M S P E A V K T L A N R G I K G T E A F V A K Q L T K
UniRef90_F4XUW6       G K I S V T S S G L E A S R V H P T A I Q V M D E I N I D I R D Q T S N P L K D
UniRef90_I4NB61       I L C S A G V Q A H N G A H M D A D A K A I L K Q H R V K S G D H R A C Q L T P
UniRef90_S6E9N9       C D S A G T S G W H D G E D M H C G T A E T L E L H H I D N K G F T S R K V R D
UniRef90_UPI00047C1C4F V R S A G S I P       A D Q V N P A A V E A M A E V G I D I S D Q R P K V L T G
UniRef90_K9Z0G3       V A S A G L E A S R V       H P T A I E V M S E I G I D I T Q Q T S N P L N E
UniRef90_D9TFP9       V Y S A G T     D I A K E V N P L A I E V M R E V G I D L S S H F P K T I F D
UniRef90_B1BZ81       I Q S A A T S K E E Y G N P V H P G T K N K L A Q Y N L S T E N K T S T Q S D Y
UniRef90_UPI0003B5320C V L S S G V S D E E Y G N P I D R R A V R V L K E R G Y E P E R H F A H R V T R
UniRef90_C0SH83       I D S A G T S A Y H L H A E P D A R T M S T L R R H G I T D Y T H A A R K V C D
UniRef90_F0IG09       V D S A G T A G Y H I G Q A P D N R S I L V A K K Y G I D I S S L K G R I F T P
UniRef90_UPI00047C0CEE V K S A G L E A H G L       N P N A V R A M N E S G I D I S K Q T S N V I D P
UniRef90_U5NE28       A M S A G S R P T G A       V H P R S L A L L E R E G I A T A G Y A S K S W D N
UniRef90_UPI0003B49CAB V M A A N           G E P A A T E A V R A M D E R Q V E I D H E S Q P L T K E
UniRef90_C8X3R7         T L A A T S A G V V K T V V D P K A R E V M A E A G V D I S G Q F S K H L S E
UniRef90_UPI0002D9DE32 I A T E P S G L     I G Q P A D S M M Q S V S A N H G L E L N E H K A Q Q L T Q
UniRef90_UPI00016C51E5 G V E A S S A G S R P S G R V N P R A V E F M K E V G Y D L T T H T S K S L A D
UniRef90_K6WYU5       S S S A G T G A L N     G Q P I H P H S A A V L A E H G Y D A S G F E S R R P P M
UniRef90_UPI000051024B V D S A G I S D E E A G N P I D P T Q A R V L A T A G Y R T D D H V A R Q I T S
UniRef90_J4J988       A Y S A G S Y P       G G T V N P F A I E R V Q V L D Y P I E Q L R S K S W D E
UniRef90_O52787       I S G M         I G Y S A D E K A Q L C M E R I G I D M S P H I A K K L N A
UniRef90_A8S8U5       I A S A A T S T E E I G N P V Y P P A R C K L A E H G I S C E G K T A R Q M T R
UniRef90_A2E677       I D S A A I S N H H I N E K A D D R A V E I L A Q H G M D L S K H R A R Q I R A
UniRef90_F2NJ13       V F S A G Y H P R E I     N P L T L K V M A E K G L D L S G H Q S K G V R D
UniRef90_W4VIX3       V F S A G I E A H G L     N P N A V K A M K E V G I D I S E Q Q S E I P N I
UniRef90_H0Q4L3         W K A M S A G S K P A G Y V H P R S I A L L A R E G L P T E G Y Y S K S W D K
UniRef90_M1WRP2       A Y S A G V E T H G L     N E R A V T V M K E S G V D I S D N K S K L V S D
UniRef90_UPI0003B59196   L T A Q S A G S K P A G Y V H P R A L E A E A G I S A A G L A S K S     W
UniRef90_E2B005       V E S A A I L D Y H I G N A P E P R A M S T L Q K E G I T N Y S H I A R Q I T K
UniRef90_A9BIG9       A Y S A G L E A S E I       H P L T I K V M E E K G I S M S E Q Y S K L D I Y
UniRef90_K1Z9F7       V Y S A G L H P T E I       H P L T V Q V M N E I G I D M N G Q K S K S V A V
UniRef90_K6WNZ5         S G G S E P G N E V N P A A I E A M A E V G I D I T G E F P K P W T D
UniRef90_Q1GUY8       I D S A G T G N W H V G H P P D R R A Q A E A Q R R G I D I S G L R A R Q L V R
UniRef90_E3EQH0       V L S S G V S D E E Y G H P I D P R A V R V L R Y E I P T H H F A H R V T R E E
UniRef90_W5W0V6       V S S A G T G G W H A G E A A D E R A T R T L A E H G Y P T E H V A A Q V D G R
UniRef90_D6TS32       A Y S A G T E A T H V     R P L A L E A M A E L G I D I S H Q E S K L N R Y
UniRef90_U3H8B2       A V S A G S F P K G     Q V L P R S L A T L Q Q A G I D T R G L R S K G N E A
UniRef90_A0A024Q716   V K S A G I E A H G L     N P N A V K A M Q E V D I D I S E Q T S D I I N R
UniRef90_D2Z742       A F S A G S A P H G L D     P L A V R V M A E A G V D I S G H R S K V T E F
UniRef90_UPI0004693E30 V Q S A G V E T H G L     N P N A V K V M N E D N I D I S N Q Q S K L     I
UniRef90_R9IC77         F S A G T K P A E R V N P M A V K V M D E M G I D L S H H I P Q S V N R
UniRef90_UPI0003B6256E V A S A G V S R E E E G R P M D R R A R E A L V E H G F D V G G T R P A R L V S
UniRef90_UPI0003B4F39E V Y S A G I E T H G V     N P K A I Q V M A E D H I D I S K H T S     N Y V
UniRef90_UPI0003B4A801 I I Y S A G I E T H G V     N P R A I Q I M A E D G I D I S N H T S     N H V
UniRef90_UPI00047A6739 V S S A G T S A W     P D S S A S D G A L L V S L E H G T D L T G H R A R P L S P
UniRef90_UPI000381F775 V R S A G L N A V     I G S P M D A T A L Q I L N E K D V D G S S H R A H Q L V P
UniRef90_A4AE96         Y R A V S A G S F P T G Q V H P K S L D I L K K H G I T V D R P L S K S W D E
UniRef90_M5RFG3       V D S A A T Q A F H V G E L A D P R M R S A A E A R G Y E L T S R A R V V T A A
UniRef90_X4ZQJ5       V R S A G V S A I S G T P M S R H A A A I L R D E G V N D L I T S S Q L S G E L
UniRef90_M9P0Q5       L I A L E N Q P V D     A Q A R H I A N N H H L S L G E N R S R H L S E H L L
UniRef90_F6IEW4       A Y S A G S Q P V G T     V N P W A I H T L E T L G Y P V D G Y R S K S W S E
UniRef90_F0G3G4       V V S A G L S A L S     G R P A D S T A V A L M A E R G I D I S G H I A S P V Q Y
UniRef90_D0LPJ6       V Q S A G E P S R V     N P F A I Q A M A E L N L D L G A H S S K S V Q T
UniRef90_A6EJ27       I I Y S A G I E T H G V     N P K A V Q V M A E D H I D I S A H T S     N H V
UniRef90_Q0YQ07       T K P A A A           V H P M A I K V M R E E W V D I S T H R P K S V D E
UniRef90_UPI0002485966   S A G L S A M V G H S A D D K A V A C M D A L N I D M R S H I A R Q I N A
UniRef90_S2ZT40       V D S A G V S D E E Q G N P I D R R A A R V L R D A G Y I V P D H R A R Q I R T
UniRef90_UPI000400F971 V R S A G L D P H G L     N P R A V Q T M K E A G I D I S S H T S D V I D P
UniRef90_N1WCZ7       I I Y S A G I E T H G V     N P K A I Q V M A E V G I D I S K H T S     N H I
UniRef90_UPI00039AF437 T K A S G K L N V     K A A E V M K E A G I D I S H H T S D S V E K
UniRef90_L5MT04       V F S A G I E A H G I     N P N A V R A M Q E V G I D M S D H T S D V I D P
UniRef90_Q1J0C6       V H S A G T A T R V K D D     A K T V M A E I G L S L D I S H T S K T L H D
UniRef90_B4K592       V D S A A L R T W N I G R R P H K L C L K V L R E H G L R S D H F C R L L T V Q
UniRef90_UPI0002FC59A1 V R S A G I E A H G L     N P N A V K M K E A G I D I S T Q T S D L I N P
UniRef90_A4SF91       V L S A G T     Q P A D A V H P L A F K A M Q E I G I D I S G Q H P K D I A T
UniRef90_W2EUW5       V A S A G S R P R     Q R M H P D A V R V L R E R Y G L D I G D L R P R H L L
UniRef90_UPI000466E4D4 V K P A G         K V N P N A K R V L E E N G I W D N N Y H S K     H L
UniRef90_W3KQC0       I S A L         I G H Q A D E K A Q L C M Q R L G I D M K P H I A R K A E H
UniRef90_N1V7G9       V L S A G S     E P R D K V N P V A V Q A M T E E G I D I S Q A V P K I L T T
UniRef90_E4TXK9       A E S A G I P G K L N S Y V V Q A M S E K G I D L S A N E T K G V F N L Y K E
UniRef90_D3PE89       V Y S A G I       E K H G I N P N M V K V M S E D G V D V S N Q Y S K T L N D
UniRef90_UPI0003B6887B   A V S S G S H P S G R V N P R A L Q T L A D A G I A T E G L S S K A S D A
UniRef90_I0ANJ1       V Y S A G T K P     A D R V N P K A V Q V M K E V G I D I S N G     K P E D V
UniRef90_X5KVG6         S G G S E P A D Q I N P A A V A A M A E V G I D I T R E Y P K P W T D
UniRef90_A9DNR2       I I Y S A G I E T H G V     N P K A V A I M K L D N V D I S K N T S N N V S E
UniRef90_O28910       V E K A E R V D E T V K R L L A E R G L K A
UniRef90_K0EWU0       V R S A G S T P     A E A V N P I A I Q A M S E V G I D I S T E I P K V L T G
UniRef90_B8HV07       V A S A G L E A C Q V       H P Q A I A T M A E K G I D I S Q Q T S K P L S Q
UniRef90_UPI000237C09E T E A S G           K L N P A V K A M K E V G I D I S H H T S D P V D Q
UniRef90_UPI00047A3352 V R S A G S     E P K D Q I N P V A I E A M A E E G I D L T G N T P K I L T V
UniRef90_G2DVA5       T D S A G T S G W H N G E N M H R G T L A A L Q K H N L S T Q G F I S S Q V K Q
UniRef90_K0NW85       S Y S A G S E V Q P A I N Q D A V R L M K D L Y G I D M E A E G Q Y S K L I D Q
UniRef90_B0TI67       R V L S A G I S A W P G A P A S V H A R K V M A D N L D G H A A A S L T P S M
UniRef90_I4JGA6       A F S A G T A P T Q V D     P R T R E A L E H L G V S T E G L F S K S I E Q
```

```
                          90            100           110           120
UniRef90_U5E7Q8          D A V E T S S V V I T M G C G D A     C P Y F P G V D Y R D W K L E D P A G
UniRef90_N9M5F9          I K Q A D L V L V M S K N Q Q Q H L E Q H W P F A K G K T F R L G H W Q S
UniRef90_UPI0003661A02   L A W A D L V L T L T G G H K R H V L Q Y F P A A V T K T Y T L K E Y V H D E D
UniRef90_D6SMH4          L P K F D Y V V T L C D H A R E S C P V F F S D A Q K I H H G F D D P P Y L A R
UniRef90_S3MLB7          E R Q A D L I L L M E Q A H F S D V L E L A P E V R G K A F L I G K W Q D P L D
UniRef90_F8X0M5          Y I N D E W D Y V I T V C G G A N E S C P A F S G K V K T R L H I G F D D P S E
UniRef90_B3QLI2          F L D R P F D Y V I T   V C D N A K E S C P I F T G K V H L G F D D P A E
UniRef90_UPI000370A1F1   E A V Q A S D Y V I T M G C G D A     C P Y F P G K T Y L D W             Q
UniRef90_R7K9P6          D I F K K A D L I V A L S D R I Q I D I E E Q F G E N K K I L G F G S N L P N T
UniRef90_F4XUW6          F K A E D Y D A V I S L C G         C G V N L P E A W V L R D V F E D W Q
UniRef90_I4NB61          E H W A D L V L L M E Q E Q L K R V V R L A P E V R G K V F L I G K W Q N D L Q
UniRef90_S6E9N9          W Q D F D Y L I A M D D Q N L V D L E K L F G H H P E K L F Q I T Q L C P N L G
UniRef90_UPI00047C1C4F   D A V E S S D V V I T M G C G D A     C P V F P G T R Y L D W Q L D D P A G
UniRef90_K9Z0G3          F N P E D Y N I V I S L C G         C G V N L P P E W V T R E V F Q D W E
UniRef90_D9TFP9          I P K E V D F L I T M G C G V E     C P F I P C K V K E D W G L P D P V E
UniRef90_B1BZ81          D K Y D Y I I A M E T K N I T N I L K I V K N D P L N K I S R L L D F T D   N P
UniRef90_UPI0003B5320C   D E I A Q T F L P M T A S H M A S L K H I L P A T K Q H M Y R S F D P A L P K P
UniRef90_C0SH83          F E R F G Y V L A M D G A N L R D L E A K R G E E Q G Q Q W
UniRef90_F0IG09          F D K F D Y I F V M D K S N Y K D I
UniRef90_UPI00047C0CEE   E I L N H A D L V V T L C G H A A     D H C P V T P P N V K R H W G F D D P A K
UniRef90_U5NE28          L P T T P D L V I T V   C A N A A G E T C P A Y L G P V L R H W G V D D P A H
UniRef90_UPI0003B49CAB   L D W A D V I F A M T R G H K D I M Q R M F P G A E E K T V L L K E Y A G D G D
UniRef90_C8X3R7          L E D F D Y V I T L C D H A A Q H C P V F P G Q A V V L H H P F P D P P Q L A R
UniRef90_UPI0002D9DE32   E L C D S N D L I M E P A H I D L V A S I A P N A R H K T L L L G Q W S V G T
UniRef90_UPI00016C51E5   F N G Q N I D V A V T M G C G D E C         P H V R A G R R E E W Q I P D P
UniRef90_K6WYU5          L T Q A D L V L C M S R E H R A A A Q Q M A P A R W K R V F T L T E F A S L A E
UniRef90_UPI000051024B   E W V A I A M T R R H Y R A L Q N L I A E L P E V R P R L R M L R E F D P R P A
UniRef90_J4J988          F A D A P Q M D F I I T V C D N A A G E V C P W P G R P I S A H W G F E D P A A
UniRef90_O52787          E K Q A D L I L V M S Q N Q Q K H I E Q T W P F A K G K T F R L G H W         Q G
UniRef90_A8S8U5          R D Y E T Y D Y L I A M D
UniRef90_A2E677          D D W F D Y I V A L D K K V Y K I L L D M K P N T S N S K V I L Y
UniRef90_F2NJ13          F M E F R Y L I V C E V A E Q T C P K N F P G V R F R V F     W P F D D P A A
UniRef90_W4VIX3          L N N A T L A V T L C G D A A D K C P L T P P N V K R E H W G G F D     D P A K
UniRef90_H0Q4L3          L   P A M P D I V I T V C S S A A G E T C P A Y L G P V L R T H W G V E D P A H
UniRef90_M1WRP2          L D I E F D Y V V T V C G N A K E T C P F F P A K S K V V H V G F D D P P S Q T
UniRef90_UPI0003B59196   D D L P E K P S V V I T L C A D A A G E A C P V Y F G S V I R S H W G M P D P A
UniRef90_E2B005          N D F Y K F D W I F G M D
UniRef90_A9BIG9          L N D R F G F L I T V C S K A E K E C P F F P G V       S I R L Y W P F D D P A A
UniRef90_K1Z9F7          F Q S F D Y V I S V C D H T A K D C P R L F P G A L R I     L N W P F A D P S A
UniRef90_K6WNZ5          E I V Q A A D I V I T M G C G D A     C P I F P G K Y E E W T L A D P A G
UniRef90_Q1GUY8          D D F Y R F D L I D E S N L R D A L A I R P D D A T A E L C L M L D L V G R A G
UniRef90_E3EQH0          I E E T D L F L P M T A A H M R A L L R Q L P S A E V H M Y R S F D P N L P K P
UniRef90_W5W0V6          H L D A D L L V A L D S G H A R T L R R I A D D P E R R L L R S F D P A A G E D
UniRef90_D6TS32          L Q E P F D D V I T V C D S A A E A C P V F P G A K H     R R H W S F P D P S R
UniRef90_U3H8B2          F A D N P P D V V I T V C D K A A G E A C P V Y F G P A L K A H W G L Q D P S E
UniRef90_A0A024Q716      D I L N N A T L A V T   L C G D A K D K C P M T P P H V K R H W G F D D P A K
UniRef90_D2Z742          F D S S I D L V I T V C D K A R G T C P V F P G D V D T I H A G F E D P P A L A
UniRef90_UPI0004693E30   D P N Y L N S A D L V I T L C G D A K D R C P V T P S T V K L H V P F T D P A Q
UniRef90_R9IC77          Y T G Q K W D I V I T V C S G A N E S C P M F T G E V R N R L H I G F D D P S E
UniRef90_UPI0003B6256E   Q D I F S A A R L V V A A E A S H A R R L E P S P D V S V R L V S D F I P G P G
UniRef90_UPI0003B4F39E   D E Y K A I P F D Q V I T V C D N A N E A C P F F P G K V E R F H E N F P D P A
UniRef90_UPI0003B4A801   D E Y T G I P F D Y V I T V C D N A N E A C P F F P G N V K R F H H F P D P A K
UniRef90_UPI00047A6739   D I V A S A D V I L A M G P H H L E R A E A M G G A G R A F L L T A F T G G E G
UniRef90_UPI000381F775   S M G A D L V I G M E K D H I A E M I Q V S P E A R G K I Y L L G K W L D     E
UniRef90_A4AE96          F A D Q S F D L V I T V C D E A A S E T C P A F F G K C K R L H W S T P D P A K
UniRef90_M5RFG3          D K R F D L V L A M D S E I H A F L H G L R K G S K T H I R M F G D Y D D E W P
UniRef90_X4ZQJ5          L N W A D L V I T L T Q S H K R H V L H Y F P K A V S K T F T L L K E Y V Q D E D
UniRef90_M9P0Q5          C Q M A D L I L V M E N D H T Q K L Y R Q F P Q T R G K V M L F G E W L D K
UniRef90_F6IEW4          F I D G P E F D L V F T V C D N A A A E S C P W P G R P I T A H W G I P D P A A
UniRef90_F0G3G4          V R D A S L V L A M T M E Q K R R I E E C Y A F A K G K V F R L G E       S E G
UniRef90_D0LPJ6          I D P D S V D L V I T L   C A E E V C P V F L S S A P R M H W P L Q D P D R K H
UniRef90_A6EJ27          D E Y L S I S F D A V I T V C D K A N E A C P Y F P G K V E R F H Q F P D P A K
UniRef90_Q0YQ07          F L E K A F D Y V I T V C D G A N E S C P T F F G E V A H R L H I G F D D P A E
UniRef90_UPI0002485966   E K K A D L I L V M S K N Q S Q H I E Q K W P F A K G K V F M L G H W         Q N
UniRef90_S2ZT40          G E E W D L V L A M T S R H L S V L E R L A D R A G P R I C L Y R D L D P E G S
UniRef90_UPI000400F971   E I L K Q A D Y I I T L C G H A N D N C P V V R N D K A E R W H W G F E D P A K
UniRef90_N1WCZ7          D E Y R N L D F S Y I L T V C D H A K E N C P Y L P S K A I R F H H N F P D P A
UniRef90_UPI00039AF437   Y L D D E W D Y V I T V C G G A K E T C P M F A G K V K H R L H I G F D D P S D
UniRef90_L5MT04          A I           L N K A D L V V T L C H H A D S A C P I T P P H V K R V H
UniRef90_Q1J0C6          L P D A Q N F D Y V I T V C D S A A E A C P V Y P A K T T R L H Y P F D P S G
UniRef90_B4K592          D F Y Y F D Y I I A M N E H I F K E L L L W A D A N R I L H T S H V I M L G A Y
UniRef90_UPI0002FC59A1   D I           L N N A D L V V T L C G D A A D K C P M T P P H V K R E H
UniRef90_A4SF91          Y T F V H Y L L I V C S K A N D T C P R I W P G A V E E N R I Y W P I E D P A A
UniRef90_W2EUW5          D T V R D R R F D S V I T L C D R A R E V C P E F         G D H A R R V H
UniRef90_UPI000466E4D4   D E V I N D D F N L V A T V C D H A K E T C P         I F P K P V P K I H I G
UniRef90_W3KQC0          I K K A D L V L V M S H N Q Q K H I E Q N W P F A K G K T Y R L G H W         Q N
UniRef90_N1V7G9          G A V Q E S D V V I T M G C G D       T C P Y F P G K R Y E D W L D D P A G
UniRef90_E4TXK9          G R T Y S H V I T V C D A E A A Q C P I F P G I S R I I       M W S F P D P S T
UniRef90_D3PE89          L V D I D F         D V V V T V C G D A H E T C P M Y L K K A K I I H
UniRef90_UPI0003B6887B   F A Q N P P N I V I T V C D N A A G E A C P L Y F G T V L K A H W G L V D P S A
UniRef90_I0ANJ1          E K Y I N D S F D Y V I T V C D N A K E T C P V F I G K V G K Q L H F E D P A D
UniRef90_X5KVG6          T V V R S A D V I V T M G C G D         T C P Y F P G K R Y E N
UniRef90_A9DNR2          Y L D I D F D F I I T V C D H A Y E N C P Y I P S K N A K R I H Q N F D P S K
UniRef90_O28910          K E K P R T V D E V N L D D F D L I V T V C E E S S C V V L P T D K P V T R W H
UniRef90_K0EWU0          D V V E S S D V V I T M G C G D A     C P Y F P G K R Y L D W               K
UniRef90_B8HV07          F Q       P E D F D V V I S L C G C G V N L P T D W V L Q E V F A D W Q L
UniRef90_UPI000237C09E   Y L G D E W D Y V I T V C G G A N E N C P V F M G K V K H R L H M G F D D P S D
UniRef90_UPI00047A3352   D A V K E S D V V I T M G C G D A     C P I F P G K R Y E D W G F E D P S D
UniRef90_G2DVA5          S D F A E Y D F A M D D N N L A D L E K L F G L H P N K I F K L T D L I P E S G
UniRef90_K0NW85          I P Q A D I A I S M G C D V         G C P Y I G R D F D D N W N
UniRef90_B0TI67          I R E A D L V I T M T G S H R D R V V Q M A P E Q A A K V F T L K E Y A G G A G
UniRef90_I4JGA6          V T G E P F D Y V I T L C D K S A L E           C L A L P G T G E Y I A W N F
```

```
                              130           140           150
UniRef90_U5E7Q8      K       G V E S V R P I R D E I K K R I E E L I A E L L
UniRef90_N9M5F9      K N I A D P Y Q Q D Q F D H T F E Q I Q Q C V N D W T S H L
UniRef90_UPI0003661A02  S V E Q D
UniRef90_D6SMH4      D A A S R D E A L G Y Y R R V R D E I K D F V Q S F P Q S L K T D
UniRef90_S3MLB7      I T D P Y R R P A S A F E Q T Y A Q L S R C I D D W L P H
UniRef90_F8X0M5      A I G T P E F I Q S E Y V R V R D E I K K A F Y E L I N K I K S N E Q K K
UniRef90_B3QLI2      A T G S E Q E V L A V R R V R D E I A A R F R Q F F D E N L R R G
UniRef90_UPI000370A1F1  L E D P A G Q G V E A V R P I R D E I K D L I E N L V A E I
UniRef90_R7K9P6      S A V S D P Y G Q G M F E Q A C S Q I E I N M S Q V A K Y I F R N
UniRef90_F4XUW6      L D D P D G Q L L E T F R R V R D E I K E R V A K L V E T L
UniRef90_I4NB61      I A D P Y R R Q K N A F Q Q T Y T H L S R C V D D W L P Y L
UniRef90_S6E9N9      I D H P D P W Y T K N F E Q T Y E L L D Q C C D A L L A M I R E K S S L
UniRef90_UPI00047C1C4F  K       G V E A V R P I R D E I E R R V R A L L S E L
UniRef90_K9Z0G3      L D D P D G Q P L D T F R R V R D E I K Q R V E H L I
UniRef90_D9TFP9      K P I         E E F R K V R D E I E K K V E L I I E R I K K E Y Y R E G
UniRef90_B1BZ81      H D I A D P W Y T H N F D E T Y D D I F E G C L S L L E H I K E K Y D L
UniRef90_UPI0003B5320C  K D L V D P W Y G G D F Q I A I D Q I E E A A P Y I A D W V E Q Q L D
UniRef90_C0SH83
UniRef90_F0IG09
UniRef90_UPI00047C0CEE  A E G T E E E K W A F F Q R V R D E I K G R I K R F A E
UniRef90_U5NE28      A T G T D A E I D A A F Y Q A Y R T L R S R I E A F L A
UniRef90_UPI0003B49CAB  K D I G D P I G G G V Y H E T A E E M E E A L Q A A W E R Y M K E K T L
UniRef90_C8X3R7      S L S T Q K A I L D V Y R E V R D A I R E Y I R N V Q D E L P E K Q P I E
UniRef90_UPI0002D9DE32  I A D P Y Q K D A F E F A L Q Q V L Q A S R Q W A Q K I A
UniRef90_UPI00016C51E5  K E M P P         E R Y R E V R D L I E R K V K D L L A S L
UniRef90_K6WYU5      T G T P D P M G R E D F D R V F G E I E P K V E T V A K W L A A Q H
UniRef90_UPI000051024B  P D V E D P W A G E K F E E T L E T I E M S V P G I T D Y L
UniRef90_J4J988      A E G T E E K R R V F E K I F R Q I S A R I N I F A N
UniRef90_O52787      K N I P D P Y Q H D Q F D E T S L L I Q T C V A D W T K H I
UniRef90_A8S8U5
UniRef90_A2E677      G N I R D P Y G R S G F N K M Y D E I A T G M P Q F L
UniRef90_F2NJ13      A T G S E E E K L A K F R Q V R D Q I D R R I Q D W L H D L
UniRef90_W4VIX3      A E G T D E E K W K V F Q R V R D E I G E R I K R F A E
UniRef90_H0Q4L3      A T G T D E E I D A A F M D A Y H I L R A R I E A F L E E L K Q R A R L K
UniRef90_M1WRP2      K S M K N E E I L D V Y R R V R D E I K E F I L T L P S A L M E
UniRef90_UPI0003B59196  K V L G D E A I R V A F A E T L E V L R R R V T A L V R Q L E A N
UniRef90_E2B005
UniRef90_A9BIG9      A K G S E E E Q L E V F R K V R D Q I E K K V I D F V E N T D K Y S N I K
UniRef90_K1Z9F7      E V G S S E E Q I N S F R K I R D L I K S K I E A F V S E
UniRef90_K6WNZ5      Q D         L D T V R P I R D E I E E R V R R L L A E L
UniRef90_Q1GUY8      Q G V T D P Y Y G E G F A A T W E D
UniRef90_E3EQH0      A D L V D P W Y G G E F Q V A I G Q I Q E V A P Y I V D W V E R Q
UniRef90_W5W0V6      L D V P D P Y Y G E G F E D V L A M I E A A M P G L L D W V R E N L
UniRef90_D6TS32      A T G S H D E Q L A V Y R Q V R D A I R T R I E Q L L A K
UniRef90_U3H8B2      A V G D E G Q V E A A F R A T L A C I E R R C R A F L A
UniRef90_A0A024Q716  A E G T E E E K W A V F Q R V R D E I G E R I K Q F
UniRef90_D2Z742      R E D Q S E E E A L I F R R V R D G I K A F V E G L
UniRef90_UPI0004693E30  A T G T K E E Q L A V F R Q V R D E I R N F I Q T I
UniRef90_R9IC77      A V G T P E F I N S E F H R V R D E I K T R F Y D F L D E L K P Q L N
UniRef90_UPI0003B6256E  S A L D D P W Y G D D F R D T R A A L I D A M P G V F A E L
UniRef90_UPI0003B4F39E  K A T G T P E V M D E F R R V R D M I K V F A A D F V S E
UniRef90_UPI0003B4A801  A V G T E E E I M T S F R Q V R E Q I R E Y T Q K F
UniRef90_UPI00047A6739  R A V S D P F G G D
UniRef90_UPI000381F775  R D I P D P Y R K K R F E H T H E L I A R G V E S W M R Y L
UniRef90_A4AE96      V T G S E E D I E R A F E E A F Q R L K Q R V E A
UniRef90_M5RFG3      N D V P D P Y Y G E G F G E V L D M L E E G C P L I M Q T L A G E
UniRef90_X4ZQJ5      A D I M D P F G G E D Y E Y A A A E I R S S L H K L L D K L E T L H R L
UniRef90_M9P0Q5      T E I P D P Y K Q S E F E H V Y Q L M E K A A G S W Q G K I
UniRef90_F6IEW4      V Q G H D A E K A A A F L E A Y R M L K R R I D L L L A
UniRef90_F0G3G4      E D V I D P Y R Q D R F E A S I A Q I E Q Y M P N W L D A I I R
UniRef90_D0LPJ6      E D L S D E E R L Q H F R V A R D Q I R A R L E V L A A
UniRef90_A6EJ27      A T G T A E E V M E E F R R V R D L I K V Y S A D F V S K
UniRef90_Q0YQ07      A T G T K E E I L A V F R R V R D E I N V R F R Q F Y N E
UniRef90_UPI0002485966  L N V P D P Y K H D Q F D E T C K N I Q T Y V A D W Q S H L
UniRef90_S2ZT40      G D V P D P W Y G G D L D T L E V I E R V T P V I V D L V R
UniRef90_UPI000400F971  A T G T E E E I T A T F A E V R D S I K A R I E Q F L K E
UniRef90_N1WCZ7      K A V G D E T K M N E F R N V R G M I R T Y S E E F I K K L
UniRef90_UPI00039AF437  K T G T P E E I H A D F V R V R E Q I K E A F Y N F Y I K I K E N N E
UniRef90_L5MT04      W G F D D P A G K E E F Q R I R D E I G S R I K R F A E
UniRef90_Q1J0C6      G S         L D R W R E V R D Q L R A Q F E A F V Q A L K Q
UniRef90_B4K592      G D L S P A R K L K A F R N A Y Y Q I K D C C K E L I
UniRef90_UPI0002FC59A1  W G F D D P A K A V G F K R V R D E I G E R M K R F A E
UniRef90_A4SF91      T E G S E E E R L E A F R R V R D E L Q A N L A D W I E K
UniRef90_W2EUW5      W S I P D P A S G D A F T R T A A D I D R R V R H L L P V L A Q
UniRef90_UPI000466E4D4  F E D P D G K D Y E E F Q K T Y K E I E         E K L P E I K
UniRef90_W3KQC0      R N V P D P Y Q H D Q F D E T C Q L I Q Q C I A D W K P Y I
UniRef90_N1V7G9      Q D I         E M V R G V R D D I K R R V Q A L V Q E L I
UniRef90_E4TXK9      F T G S D E E I M Q Q V R A V R D T I E E K V K A L I A
UniRef90_D3PE89      K G F K D P A K A K G F R E V R D Q I K D Y I K N
UniRef90_UPI0003B6887B  L T G S E A E I Q A A F D Q C L A K I A E R V Q A F F A
UniRef90_I0ANJ1      A T G T E E E I L S V F R K V R D E I K R
UniRef90_X5KVG6      W E L P D P A G Q D I V R G I R D D I E Q R V R G L L T D L
UniRef90_A9DNR2      V I G S E E Q V F N A F R K A R A Q L K D F C K N F I E
UniRef90_O28910      I E N P A G K D E G T Y R R V L A E I E E R V K K L V G E L E
UniRef90_K0EWU0      L D D P A G Q G I D A V R P I R D E I H R V R G L L D E L
UniRef90_B8HV07      D D P V         E Q P E I F T R V R D E I E T R V M E L L Q Q L S E Q S
UniRef90_UPI000237C09E  A T G S D E F I W S E Y I R I D E I K D A F S K F Y K E
UniRef90_UPI00047A3352  K D I         E T V R R R V R N D I R G R V E A L I A E I V
UniRef90_G2DVA5      Y Q M P D P W Y T G D F D E T Y H L V K T G S E A L L R K L K
UniRef90_K0NW85      L E D P T G Q S D E V F K Q V I Q Q I E K K V L Q L K E R L A K
UniRef90_B0TI67      D I A D P F G M D         E Q A Y Q Q I E G A L R K A L H R I M E
UniRef90_I4JGA6      E D P A T S P Q Q D A Y R R T L H E I H E R I K L F V
```

```
                        1         10           20          30          40
UniRef90_U7G1Y0            R I L V V C D G N I C R S P T V A F M L Q A I K P E K R V A S A G
UniRef90_UPI000379B296       V L F V C T G N S A R S P V A E A L L R R       R T A G K V T
UniRef90_T0GM59        M S E P S V L F V C T G N S A R S P L A E A A F R A E A E R A R L T     A E
UniRef90_N9MZ70            N I L V V C I G N I C R S P M A E Y L L K K E Y P H L N I E S A G
UniRef90_Q8KBQ9        K K S I L V L C T G N S C R S Q M A E G F L R S F D         S E L D
UniRef90_UPI0004753A1C   K P L N V L F L C T H N S A R S I L A E A L L N H I G H       G K F K
UniRef90_UPI00037CA300     K K T L Y F L C T G N S C R S Q M A E G W A K Q Y L G       E K W N
UniRef90_T2J9U3        M K K V M F V C K R N S C R S Q M A E G F A K T L G K       G K I E
UniRef90_L8F4E4                         M A E A V F R A R V E E A G L D G V E
UniRef90_M1R6N9          M N I A F I C V G N S C R S Q M A E G Y A K H F L K       D L K S
UniRef90_UPI000463EAD8 E G K Y N V L F I C R S A R S I F A E A A L R A T A G       D R F N
UniRef90_UPI00030967DB     M K I V F V C T G N T C R S P L A E A I A K D L K P N Y D I Q S R G
UniRef90_E1QKA8          K I K I L Y L C T G N S C R S Q M A E G F T N A L         R G D L F V
UniRef90_A0B5S3         K K R V L F V C V H N S A R S Q M A E A L L R A L         K G D N Y E
UniRef90_E2CJM7         M R N V L F V C T A N S A R S V L G E A L L R H K G E       G R F Q
UniRef90_UPI0003B495D3    M R K V L F V C T G N T C R S P M A E A L L R K R V E R E R L D   V D
UniRef90_A5DDD4               L S T N Q S C R S P M A E A V F K S R V K E L G Y E N R F
UniRef90_Y0KE91          M N I L F L C T G N S C R S I I A E A T F N A L A P S G
UniRef90_U7FZK6                      M F R Q Y V R E A G L E K I R
UniRef90_E3DNL4           Y K V A F V C I G N S C R S Q M A E G F A R K I A G       E S L D
UniRef90_A3SYB9        Q T K F N V L F V C T G N S A R S I F A E T I L R D M A G       D R F T
UniRef90_Q13LV2        M T R K Y K V L F L C R E N S A R S I I A E A L L R E L A G H R
UniRef90_F2HMU1         M K K V Y F L C T G N S C R S Q I A E G Y         G H K N L E G W E
UniRef90_UPI0003F75F57  M S T P T V C V H N A G R S Q M A A G Y L R H L A G         D R I E
UniRef90_L0F621        M N N K M I Y F I C T G N S Q M A E G F G K K Y L G         D Q Y K
UniRef90_Q8ENQ5        M S K K I I Y F L C T G N S C R S Q M A E G W G K K I L G       E E W D
UniRef90_Q5D1Y3            R I L V V C V G N V C R S P V A A A M L R R A L P D R
UniRef90_Q13QA9          M T R I L M V C E G N V C R S P V A R A L L     E R A L P R V S
UniRef90_UPI0004708E25    K K T L Y F L C T G N S C R S Q M A E G W G K K Y L G N E W     Q
UniRef90_E1W0J2        M Q L M T S V L F V C V H N A G R S Q M A A A F L S H L S E       G R I E
UniRef90_W4VH94          M N I L F V C T G N T C R S P M A Q A I L Q R K T N H H
UniRef90_M1J6F8          M R V L F M C T A N S C R S L L S E A T F N H F A P E G F V
UniRef90_UPI00047D9699    M T K I I F V C T G N T C R S P L A E S Y A R M K Y P H
UniRef90_UPI00036AEE36     M K I L F I C T H N A C R S I L S E V I A R T L G K       G R L E
UniRef90_G7HF64         M N R I L V V C T G N V C R S P A A Q A L L S R A L P G R T I E S A G
UniRef90_W7ZHG5         M K K V Y F L C T G N S C R S Q M A E G W A K Y Y L Q       D E W D
UniRef90_UPI00046E92E8     S V L F V C V H N A G R S Q M A A G F L R E L A G       G D I E
UniRef90_E7KIQ7        K P K I S V A F I C L G N F C R S P M A E A I F K H E V E K A N L E N R K
UniRef90_I9T6J7        M N M N Y K I C F V C T G N A C R S P F A E C V T K K L L A D A G M N G I E
UniRef90_J2EFV2          M R V L F M C T A N S C R S V L S E G L F N H V A P K E
UniRef90_D0D033      A M A R R K Y N V L F I C T G N S A R S I M A E S L L R A L G G     D R F E
UniRef90_UPI000475D2CE    M R R I L L V C T G N T C R S P M A E A M L K E L A G Q R G I P   L E
UniRef90_K9QPD3         M K N V M F V C K H N S R R S Q M A E G F A R T L G E       G K I T
UniRef90_UPI0002DD36C5  S T K R S V L F L C T G N S A R S Q M A E A L L R H K A G       D Q F E
UniRef90_R9PRW9        M L S V L F L C T A N A A R S Q L A E A L V N Q       R Y A E H F V
UniRef90_C5AJB1            K V L I V C H A N V C R S P T A E M L F R T H G R A A L G E G C T
UniRef90_UPI00037F129E   M K K L L F V C T H N A C R S V L A E V T A N R L         G A G
UniRef90_F3SUZ1         M T K I Y F I C T G N S C R S Q M A E G W G K N I L D       D E W Q
UniRef90_UPI000468B493    K K V L V M C T G N S C R S I I G E A L I N K Y V D         E
UniRef90_I4BNA3       A K P T V L F L C T H N A G R S Q M A L G F F S H L A G G N A V A W
UniRef90_UPI000464D643     K I L I V C H A N I C R S P M A E A L F Q A S E Q V R T     R G I V
UniRef90_UPI000426AF10    M R V L F M C T A N S C R S I L S E A L F N H L A P A G
UniRef90_UPI000464E965 M T D S P E V L F V C V H N A G R S Q M A A A L L Q H H A     L G R V A
UniRef90_F7PWB1        K K K V A F V C I H N S C R S Q M A E G W A K K L G S       D V L D
UniRef90_E2SH34                    M A E Y V M K D L V K K E G L Q Q F Y
UniRef90_I4X5S0        T K K T I Y F L C T G N S C R S Q M A E G W A K Q H L A D E W
UniRef90_E0UUX0        M S Q K K E V L I L C T G N S C R S I M A E A L V N A K I G D C
UniRef90_A0A015K6R1       M K I L F M C T A N S C R S V L S E G L F N Q M A P       A G
UniRef90_R7WPN6          M R V L F V C T G N I C R S P S A E R L L L A Y A R A E G I D L S G
UniRef90_Q2FF13          M K I L F V C T G N T C R S P L A E S I A K E V M P N H Q F E S R G
UniRef90_UPI00029A779E          L F V C T G N T C R S P M A E A L F R K L L A E R L I D R G F
UniRef90_F8B6A2        M S G K P S V L F V C V H N A G R S Q M A A G W L T W L S G G A   V D
UniRef90_UPI000381632F   M I K I L F V C T G N T C R S A M A E G M L K K M L E E R T K S K I E
UniRef90_T1BR12        M T Q P E V V L F L C V G N S A R S L M A E A M F N A D P P T G
UniRef90_U5EJI2                    M F E A     H L Y R A G L A N R V R
UniRef90_UPI0000E11823    M K I L Y I C T H N R C R S I L S E A L T N H L A G P N I I
UniRef90_UPI00035CE3D7   D P P R V L F A C T G N S A R S P I A A A L M R R S T G G R
UniRef90_K4MAB8      R L Q E K K K V L F L C T H N S A R S Q M A E G L L K A V S G G R Y     E
UniRef90_UPI00036A6E3A    M R L L V L C T H N S A R S Q M A E A W L R H H A Q A L G V A   L E
UniRef90_F9AXM9          M K I L F V C K H N A S R S I L A E A I A K K L P R H
UniRef90_UPI0003651FF4  M S A I P E V L F V C V H N A G R S Q M A A A L L H H H A R     G T V T
UniRef90_M9SM79      A H L P A R P R V L F L C V H N A G R S Q M A A A F L R H L A G E A   V E
UniRef90_UPI0003FB2F11    M K I L Y I C T H N R C R S I L S E A I T N H V S Q       G
UniRef90_J1S0J6             S V L F V C V H N A G R S Q M A A A F L A R L A G       G R V E
UniRef90_C7QZM9        M T A R P S V L F V C V H N A G R S Q M A A G F L R H L G G       D N V E
UniRef90_L8ME54        M T P K I R V L F V C V A N A A R S Q F A E A L L R H       S G G E R F E
UniRef90_A8Y5W3          M K F L F L C T G N S C R S I L S E V L F N S R A P         E
UniRef90_I3U701        Q R T Y N V L I L C T G N S A R S I M A E A L I N T M G Q G R
UniRef90_W9DS75          N K I K V L F I C I R N S Q I A E A Y L K K I G G       E R F E
UniRef90_X1VVZ3          K G I L F L C T G N S C R S Q M A E G F A K K M L P K N M     E
UniRef90_I1DVX2        M S T P S L I F I C T G N S A R S Q L A E A L F K H M A G N   S F D
UniRef90_UPI000428761D    K R L V F I C S G N I C R S P F A E K V A R A K G F D A
UniRef90_G8QS80                     M A E F M L K D M V G K L G L D Q F C
UniRef90_F8F659        K K L V Y F L C T G N S C R S Q I A D G F L K Q L G S       D K Y E
UniRef90_UPI0003602404     S V L F V C A K N G G K S Q M A A A L M E H H A R G A     V E
UniRef90_A5Z9U6                   M A Q Y V L Q D M V N N Q G I D R F Y
UniRef90_W7BIJ3        M M K I A F I C I H N S C R S Q M A E A W G N K L L S       D I S E
UniRef90_A9X5I4           Y N V L F L C T G N S A R S I L A E A I L N K         D G E G
UniRef90_UPI00047DF135  M K K V M F V C K K N S R R S Q M A E G F A R T L G Q       G K I S
UniRef90_B6FX77                    M A E F V L K D M V E K E G L D K F H
UniRef90_R5RWI1                    M A Q F V F Q D M V N H A G L D F E F
UniRef90_E6VT65        M D K V L F I C V H N S A R S Q M A E A Y L     D L F G N G E F E
```

```
                                        50              60              70              80
UniRef90_U7G1Y0          L I G L            E G Q G M E P T A R L V A E E N G L A C G E H V A R K L S S
UniRef90_UPI000379B296   V T S A G S      H P K A A L H P G A V R V L S D E F G   I D V A G Q R P R H L
UniRef90_T0GM59          A D S A G T G D W H I G S P P D W R A Q A V A L R H G I D I S G Y R G R Q V R D
UniRef90_N9MZ70          I S G L S        G H P A D K K A Q I C M K H L N I D M S K H I A K K L N H
UniRef90_Q8KBQ9          V F S A G T V P      A S E V H P L A V Q V M R E K G I D L S A N R P K K V D E
UniRef90_UPI0004753A1C   A F S A G S S P A K    D Q T P N P M T I A T L E K A G V S T E G L T S K S W D V
UniRef90_UPI00037CA300   I Y S A G I E A H G L N P N A V K A M K E V         D I D I S G Q T S D V I
UniRef90_T2J9U3          V T S S G L Q A S R V H P V A I Q V M E E I G I N I T D Q T S D G L S D F D A D
UniRef90_L8F4E4          V D S V G T G G W H E G D G A D P R T V A V L R A A G Y E E D H S A R Q Q A D W
UniRef90_M1R6N9          K H N I Y S A G M N P K D Q I H P L A I E V M K E D G I D I S S Q Y P K A L E D
UniRef90_UPI000463EAD8   V Y S A G T R P Q      S E L N P F A L E I L R A K G H D I T P L R A K N L S E
UniRef90_UPI00030967DB   I       S A F N G T P I S M Q S M E I I V S N N L T V P G T A Q Q F S E E
UniRef90_E1QKA8          A Q S A G V A P G R V D       P L A V A V M A E S G V D I S G Q R S K D V E Q
UniRef90_A0B5S3          A Y S A G I E P T E V D       P N A V S A M A E I G I D L S E Q R S K G L D S
UniRef90_E2CJM7          T Y S A G S T P R G T   V N P D A L T C L Q R H G L P T E G F R S K S W D E
UniRef90_UPI0003B495D3   V K S A G I S A L D G A A A S E Q A T Q V L E E K G I A H C H A S T P L C K E L
UniRef90_A5DDD4          I D S Y G T G G W H T G E S P D S R S V K T C R K H G V P V N H S A Q Q I T S E
UniRef90_Y0KE91            M K A M S A G S Q P A G Y V H P N S I A L L A S K G I A T A G Y V S K S W D N
UniRef90_U7FZK6          I D S A G T G D W H I G R A P D P R T Q E A A A R R G Y D M S S L R A R Q V T P
UniRef90_E3DNL4          V Y S A G T        D P A S E V K P N A I K A M K E I G I D I S D Q Y P K L L E E
UniRef90_A3SYB9          A Y S A G T L P R      S E L N P L A V E M L Q A K G H S I D A L R S K H I S E
UniRef90_Q13LV2          F D A F S A G P E P A A R V H P F A V A Q L R P G I S D L G V L S P K S W L E
UniRef90_F2HMU1          V R S A E I E T H G L       N P R A V K V M A E E G I D I S S Q K S E L I D L
UniRef90_UPI0003F75F57   V R S A G S I P    A D Q I N P V A V E A M L E E G V D I R G E A P K I L T T
UniRef90_L0F621          V Y S A G V E A H G L       N P K A V Q V M E E A R V D I S K Q T S D V I D P
UniRef90_Q8ENQ5          V Y S A G I E A H G L       N P N A I K A M R E V D I D I T N Q T S D Q I D K
UniRef90_Q5D1Y3          A I T S A G L G A L V D Q G V E P T A R E L A E A D G L D V S E H E A R Q P A M
UniRef90_Q13QA9          V S S A G T R A L   V G R H A D P L A V Q V A L E H G V D I S G H V A A S D E H
UniRef90_UPI0004708E25   V L S A G I E S H G V     H P N A V K A M N E V G I D I S K Q T S D I I D L
UniRef90_E1W0J2          V R S A G S A P    A D S V N P A A V E A M A E V G I D M S T E I P K V L T T
UniRef90_W4VH94            V Q S A G I F A G Q G S P A S E G A S Q V L R Q Q G I S Y D H Q S Q P V T K E
UniRef90_M1J6F8            A V S S G S F P K G Q V L P R S L T T L Q Q A G I P T E G L Y S K G N D A
UniRef90_UPI00047D9699   V D I S S R G L S V V N S S T S Q S L S L I E E A G L P V P S Q P E Q L T E D
UniRef90_UPI00036AEE36   T A S A G S A P R G V     V H P L T L K Y L S K H G Y S T E G L T S Q S W D E
UniRef90_G7HF64          I A A I G        G T P V D P V M N E L L V A R G F G E L P H R A R R D R V
UniRef90_W7ZHG5          V Y S A G I E A H G L       N P N A V K A M E V E V D I S N Q T S
UniRef90_UPI00046E92E8   V R S A G S A P      A E T I N P V A V D A M R E L G I D I T R K S P T L L D A
UniRef90_E7KIQ7          I D S F G T S N Y H V G E S P D H R T V S I C K Q H G V K I N H K G K Q K T K H
UniRef90_I9T6J7          V F S L G T L D C G E Y P R D A A M V D V A K E L G Y D L S G T T T V M T R E K
UniRef90_J2EFV2            M T A I S S G S F P S G R L N P R A I S T L Q S L G V D T S V L Y S K G S E S
UniRef90_D0D033          A Y S A G T R P Y      S E L N P I A V S M L E D K G L D T A R L R A K T I S E
UniRef90_UPI000475D2CE   V R S A G L S A I D G T P I S P N A A Q T L T N R N L P L P G G S T A L T D E A
UniRef90_K9QPD3          V T S S G L A I N E V D       P I A V K V M S E V G I D I S Q Q S S K P L D N
UniRef90_UPI0002DD36C5   I S S A G T S P E E I D S       R T L D A L K K F G L T I D E L K S Q S I E E
UniRef90_R9PRW9          A Y S A G T Q P K G I D       P R T I K H L Q A A Q G L S S S G L R S K T I T E
UniRef90_C5AJB1          F H S A G I D A    N D G D G I D P V M Q A L L A E R G V D A S A H R S R R L N S
UniRef90_UPI00037F129E   R L G A A S A G S Q P A G R I H P L T L E Y L Q G K G V S T E G L K S Q S W D D
UniRef90_F3SUZ1          V Y S G G I E A H G V     N P K A I D A M K E V G I D I S N H T S N L I D E
UniRef90_UPI000468B493   V T A Y S C G V K P S G K V H E S A K N I L M Q N D A W S E E Y H S K H L D E L
UniRef90_I4BNA3              S G G S E P A D E I N P A A I Q A M A E V G I D I T G E Y P K P W T D
UniRef90_UPI000464D643   V H S A G L H A R D   G Q E A D H V V A R L L A E R D I D V S A H R S R R I T T
UniRef90_UPI000426AF10     F E A V S S G S F P K G T V L P R S L T T L E R A G I S T V G L S S K G N D A
UniRef90_UPI000464E965   V R S A G S        E P E A R V N P A A A Q A L A E W G L D I T A E V P A K L S T
UniRef90_F7PWB1          V Y S A G T E D Y P E      V K P G A V Q V M E E L D I S M S E H R P K L L T D
UniRef90_E2SH34          I S S A G T S R E E I G N G V H Y G T R R K L K D E G I P V G N H R A V Q L Q K
UniRef90_I4X5S0            A V Y S A G I E A H G L N P N A V K A M N E V N I D I S N Q S S D T I D T
UniRef90_E0UUX0          V H A Q S S G V K A S G K V N P H A Q A L L E K K G Y W R D E Y H S K V I E T
UniRef90_A0A015K6R1      F T A I S S G S F P S G K L       N P A V S T L Q G L G I D T S G L Y S K G S E V
UniRef90_R7WPN6          R V S S A G V R A V I G S A M E P T A A D V L T R L G G D P S G F T A R M F T P
UniRef90_Q2FF13          I F A         V N N Q G V S N Y V E D L V E E H H L A E T T L S Q Q F T E
UniRef90_UPI00029A779E   N V L S A G L S A G N G S P A S R E A V N L L A E E G I D L R N H E S Q P E R L
UniRef90_F8B6A2          V R S A G S L P    A E R V N P V A V A A M E M G I D L G A Q T P K V F T S
UniRef90_UPI000381632F   V I S A G I S A L   P G I S P T F E A I S V M F E Q G I D S G H Y A Q Q E E L
UniRef90_T1BR12            W T A T S A G T R P A P A A H P R T G P M L R E I G L D L P P H P P R Q L T P
UniRef90_U5EJI2          V T S A G T G S W H V G D P A D P R T E A T L R R A G Y P T D H I A A T F G T D
UniRef90_UPI0000E11823     A K S A G S Q P S G E V H P L S L R Y L I E S E I P T D G L Q S Q S W D E
UniRef90_UPI00035CE3D7   V A A A D A G S A P K E R V H P A A V R V L R E R Y G I D I A E R R P R H L
UniRef90_K4MAB8          A Y S A G V E A T H V D       P R A V T V M Q E I G I D I S S Q R S K K A R E
UniRef90_UPI00036A6E3A   V H S A G T       E K T F V K E E A R Q V M A E V G L D L S H V S K T L W
UniRef90_F9AXM9          F Q I A S G G S H P K G Q I N P R I A Q Y L E M H G F D A S E F H S T S W E E
UniRef90_UPI0003651FF4   V R S A G S      D P A D T I N P A V V T A M E E L G I D L S R E F P K P L T T
UniRef90_M9SM79          V Y S A G S A P      A E A V N P V A V A A M A E A G I D L S G A H P R A L A P
UniRef90_UPI0003FB2F11   A I I A K S A G S Q P S G Q V H P L S I H Y L Q E A G I P V A G L Q S Q S W D E
UniRef90_J1S0J6          V R S A G S A P      A E T V P A V V A A M A E V G I D L S A Q A P K I L T A
UniRef90_C7QZM9          V R S A G S A P      A N Q I N P V A V D A M N E V G I D I T A E Q P K V L T T
UniRef90_L8ME54          A F S A G T A P G E V D       A R A L A E L R H L G I D A Y G L R S K S I D E
UniRef90_A8Y5W3          G W K A Y S A G S K P S S Q V H P L T M K T L Q N L G L S T D G L S K S I A A
UniRef90_I3U701            F N A F S A G S H P T G K V N P F A V E K T E S L G Y P A E K L R S K S W D E
UniRef90_W9DS75          V E S A G Y K P E P V       P I A V K V M K E G I D L S T K T P Q S A W D
UniRef90_X1VVZ3          I F S A G L E P K G V         H P I A V K V M Q E I G V D L S H Q K S K
UniRef90_I1DVX2          V Y S A G T A P E P V D       P R V F E V L A A R H I S T N G L H S K
UniRef90_UPI0004287610     I S F G L D C R G G D A A N E R A T A L A G A H Q G L M E Q H C S Q N L R D
UniRef90_G8QS80          I A S S A T S R E E I G N G I H P G T K A K L R E Q G I A F A N H R A R S S D Y
UniRef90_F8F659          V K S A G L E A H G L       N P R A V Q V M E K A G V D I S G H T S D V I D P
UniRef90_UPI0003602404   V H S A G T K P      G S K I N A L S A E V V A E V G A D M S S G T P K P I D P
UniRef90_A5Z9U6          I D S A A T S Y E E I G N G V H P G T R N K L K S E G I P C G N H R A R H M E K
UniRef90_W7BIJ3          I Y S A G T E D Y P E      V K P L A V S E V G M D T S D Q Y P K L
UniRef90_A9X5I4          R F R A F S A G S Q P K G E V H P L A I K E L D A L G Y S T E N L S S K S W D V
UniRef90_UPI00047DF135   V A S S G L A A S Q V D       P I T V Q V M K E I G I D I S N Q T S K P L S D
UniRef90_B6FX77          I E S S A T S R E E I G N P V H H G T R K K L A E V G I S T A G K Y A R Q I T K
UniRef90_R5RWI1          I D S K A T S T E E I G N P H R G T V R K M N E L G I P M Q P H F A S Q V T K
UniRef90_E6VT65          A Q S A G F E P T S I N P L V V E V M R E E G V D L S S K G V Q S A F D L F R Q
```

Sequence alignment (positions 90, 100, 110, 120)

```
UniRef90_U7G1Y0          E I C R D H D L I M E S R Q K E R L S K Q F P E A S G K T F L L S H W N G G H
UniRef90_UPI000379B296   D T V A G H R F D H V I T L C D K V R E T C P E F P H H P R R           R H
UniRef90_T0GM59          F H R F G H I F A L D G A N L R D L R R I R P D G T A R L G L L M D L V P R E G
UniRef90_N9MZ70          L R K A D L I L V M S K N Q Q A H I E Q A W S F A K G K T F R L G H W       K N
UniRef90_Q8KBQ9          F L T K P F D Y V V T V C D S A K E S C P L F T G Q V K H R Q H I G F D D P A A
UniRef90_UPI0004753A1C   F A         T P D A P H M D L V I T V C D N A A G E V C P Y W P G Q P A T H
UniRef90_UPI00037CA300   D M E L L N R A D M I V T L C S D A D D K C P A T P S N I R R H W G F D D P A K
UniRef90_T2J9U3          S Y N A V I S L C G             C G V N L P Q E W V L R D I F E D W E
UniRef90_L8F4E4          F G R L D L V I A L D D G H L R A L R R L A P T A Q D K V R L L R S Y D P A H D
UniRef90_M1R6N9          I P L K D L D I Y I T L C G E E A       C P N I P G V K H L H W G L
UniRef90_UPI000463EAD8   F Q G P E A P F V F T V C D R A A N E E C P P W E G L P V T G H W G V P D P V K
UniRef90_UPI00030967DB   D L D A D L I L T M T E A H K S I L E S Q F     T H E N I H A L K H Y V K G E K
UniRef90_E1QKA8          F I G Q S W D W V V T C D N A R E S C P F F P G P A R R V H R G F D D P P F L A
UniRef90_A0B5S3          M R D I H F D T I V T L C D A A D S C P Y I P G V H           M H
UniRef90_E2CJM7          F S E A G G P E       M D L I I T V C D S A A G E V C P V W L G H P M V H
UniRef90_UPI0003B495D3   V A W A D V I L T M T A Q H K A F I I H D F P E S V D K I F T L K E Y
UniRef90_A5DDD4          F K K F D Y V I A M D N S N K E D L L H M K P N A K V A L F G E W R T D E S F G
UniRef90_Y0KE91          L P V T P D I V I T V C S N A A     G E T C P A Y L G K V I R H W G V E D P A K
UniRef90_U7FZK6          F Y A F D V V L A M D N A N L A D L E A M R P D A N G T L A R F L D Y T D S A E
UniRef90_E3DNL4          I P S E L D I L I T M G C G V E         C P Y L P C K F R E D W G
UniRef90_A3SYB9          F Q T A     D A P Q M D F V F T V C D H A A N E E C P T W P G Q P V S H
UniRef90_Q13LV2          F T G E W A P R M D L V I A L D E S V R H A P A F P G E P Q L C W S F A D P L A
UniRef90_F2HMU1          D Y F N E C D L I I T L C G     D A L D K C P M I P K G V N H E H W D L Q D P A C
UniRef90_UPI0003F75F57   D A V Q D S D V V I T M G C G D A       C P F F P G K R Y E D W       K
UniRef90_L0F621          A L L T Q A D Y V I T     L C G D A N D R C P I T P P Q V K R H W G F D D P A R
UniRef90_Q8ENQ5          D I         L N K A D F V V T L C G D A K D K C P M T P P H V K R D H
UniRef90_Q5D1Y3          L Q E A D L V L V M T E G Q R R A V A D L S P A V L G K T M L L G R W D D G Q G
UniRef90_Q13QA9          V R S A D V V L T M T G T Q R A L I L D R F P S A R G K V F R L G E       H E Q
UniRef90_UPI0004708E25   E I L N S A D Y V V T     L C G D A A D K C P M T P L H V K R H W G F D D P A K
UniRef90_E1W0J2          E A V Q D S D V V I T M G C G D A       C P F F P G K R Y E D W       K
UniRef90_W4VH94          L M W A D L V L T M T Q Q H R D M L K Q N Y S E Y G T K V F T L K E
UniRef90_M1J6F8          F E N D L D I V I T V C D R A A G E T C P V Y F G S A L K S H W G L E D P S D
UniRef90_UPI00047D9699   D I E N S T L L V M G N S H K N A I L E H F P T A     D V K L I S E C A D G E I
UniRef90_UPI00036AEE36   L S N F D P D T V C D S A A G E A C P V W M G N T L K V H W G L P D P S K G H S
UniRef90_G7HF64          C R W A D L I L V M E T A Q R H L I E R A Y P M T R G R V Y R L T E       R D Q
UniRef90_W7ZHG5          D M I D N T L L N N A D F V V T L C G D A A D K C P M T P P H V K R A H
UniRef90_UPI00046E92E8   D T V R T S D V V I T M G C G D A C P I F P G K R Y E D W V L
UniRef90_E7KIQ7          F D E Y D Y I I G M D E S N I N N L
UniRef90_I9T6J7          L M A A D A V I V F D E R H R D A I T R V D Y S Y W N K I V L F N K M A F D E D
UniRef90_J2EFV2          F T D N P P D I V I T V C D K A A G E P C P V Y F G S A I K T H W G L S D P S E
UniRef90_D0D033          F R D A P P L D F V F T V C D R A A N E D C P W A G Q P I S A H W G L P D P V A
UniRef90_UPI000475D2CE   V E W A D L I L T M T V G H K R T I I G R Y P H V S D K V Y T L K E F
UniRef90_K9QPD3          F N P E D Y D I V I S L C G C G V     N L P E A W V I R E V F E D W Q
UniRef90_UPI0002DD36C5   F S G Q E F D F V I T C D K A N Q E C R N F P G A K A Q     L A W D F P D P K E
UniRef90_R9PRW9          L E Q D I Q Q Q T Q R P A L F N F I I T L C D S A K Q E C A L L P N G E A I L H
UniRef90_C5AJB1          V R E A D L V L A T E R H Q I D A I E S V D R F A R G K V F L L G K W E D
UniRef90_UPI00037F129E   F A D Y E P D L V I T V C D S A A     G E A C P     L W M G D A A K A H
UniRef90_F3SUZ1          T I         L H Q S D L V V T L C S D A D Q N C P V L P P N V K K E H
UniRef90_UPI000468B493   L H V E F D L V V T V C D H A N E T C P M F P K K T K I L H V G F
UniRef90_I4BNA3          E I V Q A A D A V I T M G C G D A C P         I I P G K R Y E N
UniRef90_UPI000464D643   E M D A Q L V L V M E E R Q I R E V S D L D P S S R G K V H L L G K W L N V
UniRef90_UPI000426AF10   F E G C P P D I V I T V C D K A A G E S C P V W F G P A I K S H W G L E D P S D
UniRef90_UPI000464E965   S D V E A A D V V I T M G C G D A       C P I F P G K R Y L D W D L D D P A G
UniRef90_F7PWB1          I P N E L D I L I T M G C G V E         C P H V P T K H R E D W       G
UniRef90_E2SH34          E D Y Y D Y L I G M D E A N M R N M E R I H G D R E H K L Y L L L D F T N R P G
UniRef90_I4X5S0          D L L N H A D F V V T     L C G D A A D K C P M T P P H V R R H W G F E D P A K
UniRef90_E0UUX0          I L D T P F D L V V T C D A A K E T C P M F P K A V K T I H I G F E D P S G K A
UniRef90_A0A015K6R1      F A D T P P D I V I T V C D K A G G E P C P V Y F G P A I K S H W G L S D P S D
UniRef90_R7WPN6          A R D A D L V L T M T E R Q R D R V L A E A P R A M R R T F T F V E
UniRef90_Q2FF13          A D L K A D I I L T M S Y S H K E L I E A H F G L Q N H V F T L H E Y V K E A G
UniRef90_UPI00029A779E   L L H A D H V L T M T R G H R Q S I V S A Y P D F A D R V N L       L S S E H
UniRef90_F8B6A2          E A V E A S D V V I T M G C G D     V C P V F P G K R Y E D W K
UniRef90_UPI000381632F   I K K A D L I L V M T N E H K E Y I H K E F P F A Q N K T F L L K K F T I N N K
UniRef90_T1BR12          E M I D R A R L R I T M G C R D D A A C P A R L A A V E V R       D W A
UniRef90_U5EJI2          H R D A D L I I A L D T G H D R E L A H R G V P T E Q R R L L R S F D P A A D G
UniRef90_UPI0000E11823   F E N F K P D I V I T V C D S A A G E S C P I W F D S T V K V H W G L A D P S K
UniRef90_UPI00035CE3D7   D T L A G R R F D Y V V T L C D R V R E V C P E F P G R P R R I H W S V P D P A
UniRef90_K4MAB8          F Q D I V F D V A V T C D R A K Q A C S I C S M P L E V P A S K D D D S P R I H
UniRef90_UPI00036A6E3A   E V P D P W G F D L V L T L C A E A E A A C P T Y P A P T Q R R H
UniRef90_F9AXM9          R L S F H P D L I I T V C D T M H N E T C P N W L S A G I R V A W D L E P L P N
UniRef90_UPI0003651FF4   E A V Q A A D V V I T M G C G D A       C P V F P G K R Y L D W K L D D P A G
UniRef90_M9SM79          E D V R A A D L V V T M G C G D     T C P V L P G T A Y R D W A L D D P A G
UniRef90_UPI0003FB2F11   F E D F A P D V V V T V C D S A A G E A C P V W F G N T V K V H W G L S D P S K
UniRef90_J1S0J6          D A V R A S D V V I T M G C G D A       C P V F P G R T Y L D W K L A D P A G
UniRef90_C7QZM9          D A V Q A S D V V I T M G C G D A C P         I F P G K R Y E D
UniRef90_L8ME54          F A G E R F D Y V I T L C D K S A L E C Q A L P G A G E V     L A W H F E D P V T
UniRef90_A8Y5W3          C E Q Y Q P D V V I T V C D S A A Q E A C P L Y L G G A I K A H W G L S D P S H
UniRef90_I3U701          F A M A D S P I M D C D N A A G E V C P V W P G K P I T A H     W G F E D P A A
UniRef90_W9DS75          C F K E G R Y Q Y V I T V C D R A H E E C P W P F F T Q L H W P Y P D P E T
UniRef90_X1VVZ3          N I S E I S I D K I S I V V T L C G D A A E R C P V F P G K V K R I H
UniRef90_I1DVX2          E L A S L S D K Y F D Y A I T L C D K A R Q S C I T Q V K A A Q V L A
UniRef90_UPI000428761D   Y S A Q A Q D L L L V M E P E Q L T R T K A Q L P N S E V A L L G L W C K P S I
UniRef90_G8QS80          D S Y D L L L G M D E N N K R N M L R I F C S D P Q E K I H R L L D Y T P   S P
UniRef90_F8F659          Q L L N R A D Y V I T L C G H A D E H C P V I S N K D V V K W H W G F E D P A K
UniRef90_UPI0003602404   E L L R R V D R I V V V L G D E A R V     E P V E G M T G T I E T W H T D E
UniRef90_A5Z9U6          S D Y F D Y I I G M D S A N I R N I G R I V G N D R D G K V Y K L L H F A G E E
UniRef90_W7BIJ3          L K D M P A D L I I T M G C G E C P Y V P A N Y R E D W G
UniRef90_A9X5I4          F T D A P Q M D F I F T V C D N A A G E A C P V W I G H P M T H W G I E D P A A
UniRef90_UPI00047DF135   F N S E D Y D A V I S L C G         C G V N L P E D W V I R E V F E D W Q
UniRef90_B6FX77          K D Y F D Y I L V M D D M N R R N L K R V V G E D V D N K V Y K L L H F A G S E
UniRef90_R5RWI1          S D Y F D Y I I G M D K Y K N M M R I F F G G D P D G K V L S L L L E F A Y A G
UniRef90_E6VT65          G R V F S Y V I T V C S D A D E A Q C P I Y P G L V R       R L H I P F A D P S K
```

```
                                      130             140             150
UniRef90_U7G1Y0          D I P D P Y K R D A F E R I Y P M M Q A A T Q A W A E K L
UniRef90_UPI000379B296   W S I P D P A G A R E F A R T A A E I D T R V R H L L P D L
UniRef90_T0GM59          T N V A D P Y F G D G F D V T W D D V T R
UniRef90_N9MZ70          K N V P D P Y Q H D Q F D D T C Q L I Q Q C L T D W K N Y I
UniRef90_Q8KBQ9          A T G S S E E V L A E F R R V R D E I E Q E F G K F
UniRef90_UPI0004753A1C   W G Y A D P Q K Q E A F K Q T L H Q I K R R L D L F
UniRef90_UPI00037CA300   A E G N D L Q R W G V F Q R D E I G N R I K S F
UniRef90_T2J9U3          L D D P D G Q P I E T F Y R V R D E I K V K V T E L I K K M E Q
UniRef90_L8F4E4          L D V P D P Y Y G G G F E E C L E M V E A A S E G L L P A V R D A L A A R G
UniRef90_M1R6N9              E D P A K T N D F R S V R D I I K Q K V K D F L Y E L E
UniRef90_UPI000463EAD8   A E G T D A Q K A L A F Q Q A Y G A L A N R I R A F L D K I A Q Q K
UniRef90_UPI00030967DB   G D V L D P Y G Q N I Y Q N T Y E E L S M L I K E L L Q
UniRef90_E1QKA8          Q S A K N E E A L A I Y R R V R D E I K A M V L G L
UniRef90_A0B5S3          R A F P D P A G G G A F R R V R D D I K R W I E D
UniRef90_E2CJM7          W G I P D P A R G A A F D F A Y E H L S R R I D A L L E
UniRef90_UPI0003B495D3
UniRef90_A5DDD4          K I V V D P Y Y G D G F E T N F K Q L S H F S D E F L K E L G E K Q N L
UniRef90_Y0KE91          A T G T D A E I D A A F E L A Y S I L R K R I E A F
UniRef90_U7FZK6          R E V P D P Y Y G D F D Q V L D L V E D G A R G L L A S L Q E R L
UniRef90_E3DNL4          L E D P A G K S I D F F R E T R N I I K K N V E N L I K K I E
UniRef90_A3SYB9          W G M P D P V K A E G F Q Q T Y G A L H N R L L A F
UniRef90_Q13LV2          G D M A E P E R A R L F D K V F W Q I V R Q V S A F I E
UniRef90_F2HMU1          A I G S E T E I L A E F R K T R D L I K E K V K
UniRef90_UPI0003F75F57   L D D P A G Q G I D A V R P I R D D I K R R I Q E L I A S L E
UniRef90_L0F621          A E G S E E E R L L V F R R V R D E I E E R I M R F A
UniRef90_Q8ENQ5          W G F E D P A K A Q G F Q Q V R D K I G D R L K V F A K
UniRef90_Q5D1Y3          R E I P D P Y R R E V F V H V H Q L L D E A T S S W T S K L
UniRef90_Q13QA9          L D I V D P Y Q R H R F E L A F A Q I E H S V L K W C E D I A R
UniRef90_UPI0004708E25   A E G T D E E K W A F F Q R V R D E I G A R I E H Y A K
UniRef90_E1W0J2          L E D P A G Q G V D G V R P I R D E I R E R L E N L I S E L L
UniRef90_W4VH94              Y T A S D Y E Q V W T A L K E A Y A Q L
UniRef90_M1J6F8          V I G D E S T V D A A F R A T L V R I E Q R C K A F L A
UniRef90_UPI00047D9699   K N I P D P Y G G T Q Y D E V F I H L Q K Y I D K F
UniRef90_UPI00036AEE36   S G E H D E Q E A E A F A H V I N V I E K R I K T L L E K
UniRef90_G7HF64          T D V P D P Y R R S R Y D Y A M K L I E R G V A D W A V R I A R
UniRef90_W7ZHG5          W G F D D P A K A E G F Q R V R D E I G L R I K A F K E
UniRef90_UPI00046E92E8       D D P A G Q G L E S V R R I R D E I R T R V E A L I A D L A P D A G T K
UniRef90_E7KIQ7
UniRef90_I9T6J7          G N V E D P H Y Q T A Y H R V A K H I E N G C K R L V E Q W K
UniRef90_J2EFV2          V D G S D E E I Q A A F D A T V A K I R Q R F A A F
UniRef90_D0D033          A T G T E A E R R L A F Q Q V Y G M L K H R L S A F
UniRef90_UPI000475D2CE
UniRef90_K9QPD3          L D D P A G G E I F R Q V R D Q V K E R V I K L I A S L I
UniRef90_UPI0002DD36C5   R T C N N P         F A T T L S E L N N R L S M F I
UniRef90_R9PRW9          W N L P D P A S E Q G F E Q V F S E L E L R L A E F V R
UniRef90_C5AJB1          A E I S D P H G G S A Y R E S C R L I E R L V Q G W L Q K L
UniRef90_UPI00037F129E   W G L P D P E P A S A F D A V V D V L E R R V A A L L K A P L E E L
UniRef90_F3SUZ1          W G F D D P A G W S E F Q R V R D E I G K R I Q E F K E A L V
UniRef90_UPI000468B493       E D P D G Q P Y E A F E K T Y K E I K E V         L L S K V K K
UniRef90_I4BNA3          W D L P D P A G Q D A V R P I R D Q I E Q R V R R L L T D L
UniRef90_UPI000464D643       E I Y D P Y R Q A E Y R G S A E L V E Q S V E N W I K K I
UniRef90_UPI000426AF10   V Q G D E A Q V D T A F T E T L A R I Q Q R C Q A F F D E I K R E L D
UniRef90_UPI000464E965   R D V         E A V R P I R D D I D R R V R G L L A E L L
UniRef90_F7PWB1          L E D P S G G P I E G F R N T R D I I K G K V E D L I T R V K R
UniRef90_E2SH34          A I A D P W Y T G N F D D T F R D V M E G C R G F L E Y L K Q E G C L K
UniRef90_I4X5S0          A Q G T D E E K W A V F Q M V R D A I G T R I A T F A K
UniRef90_E0UUX0          E         Q E Y E K T L D L L E         K E L L P I I K K E L
UniRef90_A0A015K6R1      V E G S D E A I Q A A F D A T V E H I K R R F A A F F A
UniRef90_R7WPN6
UniRef90_Q2FF13          E V I D P Y G G E M Y V H T Y E E L V S L I L K L K D I I
UniRef90_UPI00029A779E   L D I S D P Y G G G A R E     Y A A C K V S I E H H L K T L I T H L
UniRef90_F8B6A2          L D D P A G Q G I D A V R L I R D E I R A R V E K L L Q D L L
UniRef90_UPI000381632F   S E
UniRef90_T1BR12          L P D P V P L D D H G F R A V R D         R L A G L V R D L R T E L A L A G
UniRef90_U5EJI2          S D V P D P Y Y G D D F D L V R D Q I E A A I P G L L D W V R
UniRef90_UPI0000E11823   I E G S E E E K A K G F K I C M N E I T K R I N Q L L
UniRef90_UPI00035CE3D7   D G D A D R S A D G G F A R T A A E I E A R V R H L L P V L I D Q
UniRef90_K4MAB8          K G F D D P A S A E G F R R V R D E I K E W I
UniRef90_UPI00036A6E3A   V P F P D P Q G L E A W R Q V R D A L G R M S R F L V E R L R E
UniRef90_F9AXM9          D D A S I S E F N K E C D N I Y A S L T R R I E A L A
UniRef90_UPI0003651FF4   K S V         D A V R P I R D D I D R R V R A L L A E L V
UniRef90_M9SM79          Q A L P         A V R R V R D E I G R R V R E L A E E L
UniRef90_UPI0003FB2F11   I E G S E E Q K A D G F R A C I A E I T E R V N K L M
UniRef90_J1S0J6          Q         G V E A V R P I R D E I E Q R I R Q L L T A L L
UniRef90_C7QZM9          W K L E D P A G Q E S V R P I R D E I R Q R I L T L L G E L
UniRef90_L8ME54          S E R P D         A F R H C V Q E I H E R I K M F M
UniRef90_A8Y5W3          L E L P E Q E K L N A F F M T V D H I N K R L D A L F A
UniRef90_I3U701          V E G S E E K R Q A F D K V F R N I M N R V R L F V
UniRef90_W9DS75          F T G T E E E K L E Q T R K L R D A I K G R I G K F V E D I D K
UniRef90_X1VVZ3          W E L E D P A K A Q G F Q K V R D K I R S H I E N
UniRef90_I1DVX2          W D F A D P K P T A G F D V V L N E L S E R I K Y F L
UniRef90_UPI000428761D   A Y L H D P Y T A S E F E R C F S C V E I A V T N L I A R I
UniRef90_G8QS80          R D I A D P W Y T E N F E A T F K D I R Q G C L G L L D Y L A S K N R
UniRef90_F8F659          A T G T E E E V M A K F R E V R D S I K L R M E Q F V A E
UniRef90_UPI0003602404   P S V R G I E G A E R M R L V R D D I D T R V R R L L D E L T A E
UniRef90_A5Z9U6          R D I A D P W Y T G N F D A T Y D D V L K G C T A L L N E I L
UniRef90_W7BIJ3          L D D P S G G P I E D F R I T R D S I E E K V M Q L R E R I L
UniRef90_A9X5I4          A E G N D A E K Q R A F A Q A A R F L K N R I S A F L D R M A L Q K N L K
UniRef90_UPI00047DF135   L E D P E G E S I D T F R C V R D Q V K E R V V K L I E E L
UniRef90_B6FX77          R D I A D P W Y T G N F D D T V T Y D D V M E G C S A F L E Y C K Q N
UniRef90_R5RWI1          R D I A D P W Y T G N F D D T Y R D V K E G C E A L L D K
UniRef90_E6VT65          L E G T R E E K L A Q L R G I R D Q I R E A V K G F V A W V R
```

```
                                    1         10        20        30        40
UniRef90_B6XVI1                     M R V L F I C T G N I C R S P M G E L L F R T Y T Q G T S L       E
UniRef90_X6AG24                                               M L A E R G R D M V L D D I V
UniRef90_S6B606                 M T K V L I L C T G N S C R S Q M A E A I V N H D L G     P Q V R
UniRef90_B6IVN9           S R V Y S V L F L C T H N S A R S I M A E A I L N R I G G       G R F R
UniRef90_A4J9B3             K K I L F V C T G N T C R S S M A E A L A K A L A E E K N L G G Y T
UniRef90_B3T7B8               I V F I C T A N I C R S P M A E K L F E A L A K S S T R K K F R
UniRef90_H1Z1H1        A K K K V L F V C T H N S A R S M A E G Y L N A       R F G E I F E
UniRef90_F4CLZ9              R V L F I C T G N S A R S P V A E A V L R S I       C G E R V E
UniRef90_UPI0003B47374   M T D K P T V L F V C V H N A G R S Q M A A G F M T A L S G       G K V E
UniRef90_A6P2T3                              M K D L V K K A G L E Q I Q
UniRef90_K2HJS6           M K L P L R V L F L C T G N S C R S I I A E A L A N H L       G A G
UniRef90_K8NQV8           M T D P I N V L F L C T G N S A R S I L A E S I L R K         D G E G
UniRef90_UPI00035C86D6              V C L G N I C R S P M A N A V V A N K T S D I K K P K V I
UniRef90_W9TLV0              M N V L F L C T A N S C R S I L S E A I F N A M A P K G
UniRef90_K1TC82                           M A E Y V M K D L V R Q G R E D E F V
UniRef90_UPI0002E35F9D         M N I L F V C T G N T C R S P M A E A I M K A R T N H H
UniRef90_Y5PCM6              M K I I F V C T G N T C R S P I A E S I A T A L L P N D S I Q S R G
UniRef90_UPI00039D02A9        S V L F V C V K N G G K S Q M A A A L M R L H A G       D R V E
UniRef90_K9EWK4              M K I L F V C D G N I C R S P T A A T F F C S I L E N       G S I E
UniRef90_D5BN48          Q D T R N V L F L C T G N S A R S L I A E G I L R H R G G A R
UniRef90_I3X5E7          M T R K F N V M F L C T G N S A R S I I A E S I L R K V G G       G K F N
UniRef90_W8TJS6          M S E K I K V A F V C V H N S C R S Q M A E A I S K I L A S     D V F E
UniRef90_K2JHN2               P Y R V L F L C S G N S A R S I M A E S I L N T L G K G R F V A Y
UniRef90_R6K370          M N R F N K V I F V C M G N T C R S P M A A T I M S N L M P E M R S E S R G
UniRef90_E1IAS5                M T V L F L C R A N S Q M A E G W L R L S A G R M I
UniRef90_D3P364      T A Q K T Y N V L F L C T H N S A R S I M A E C L M R R W G A       G R F N
UniRef90_H5YP26             M F N V L F L C T G N S A R S I L A E S I L R K         D G A G
UniRef90_E6J781               R V L F L C V H N A G R S Q M A A G Y L S H L A G       G R I D
UniRef90_H8FWB2               V L V L C T G N S A R S V L A E V L I N A L G E G R
UniRef90_UPI00036943BE     N V Y S V L F L C T G N S N R S I M A E A I L N R         E G M G
UniRef90_UPI0003B3D95F   M S D A Y N S V L V L C T G N S A R S L I V E T L I R E L G A D A     G F A
UniRef90_A0JRE4           K K P S V L F L C V H N A G R S Q M A A A F L T T L S K G A       I E
UniRef90_U4TRC8             M P Q V Y F L C T V N S C R S Q M A E G F A K A L L G     S D W R
UniRef90_UPI00047978D3      M K R V F V C V E N A N R S Q M A E A F A H I Y G G A D V D
UniRef90_U7GJ59      M M S E V Y N V L F L C T G N S A R S I M A E A I M N R         E G M G
UniRef90_UPI0003B61010     E N T P S V L F V C V K N S K Q M A A A L M R H H A A   Q T G A V I D
UniRef90_Q2SPK8                M K L L F L C T H N A C R S I L A E S L A R Q I       G A G
UniRef90_Y1JWM4        M Q N P F N V L F L C T G N S T R S I M A E V L M N Q M G Q       G N F K
UniRef90_A7NLK8               V L F I C T R N S A R S Q I A E A W L R H L S G G R I I T R
UniRef90_A8LEZ3              R L L V V C L G N H C R S P L A E A V L T Q K S G G A     L D
UniRef90_A8MKL8           K K V A F V C V H N S C R S Q M A E A W A K K L G G H       V L E
UniRef90_F5RAB7          M T Q P L N V L F L C T H N S A R S V L A E C L L N H L G R G R
UniRef90_A9ATJ8               P Y S I L I L C T G N T S R S V M A E A L F N V L G N       G R F R
UniRef90_V9XIN4              M R I L Y V C T G N I C R S P T A E R L T T A Y A A E A G R E D L S
UniRef90_A6TK49             M K T I L F I C T G N T C R S Q M E A L M K E L L Q P H T L G E V T
UniRef90_R6YB19             M K I M F V C T G N T C R S A M A H H M L E K I V E D K K     D I E
UniRef90_A4JQJ6               R I L I V C D G N A C R S P M A S A M L A R A L P F I Q V R S A G
UniRef90_Q07VY5          K K K T V L F L C T G N S A R S Q M A E A L L R N K A A       D Q F D
UniRef90_UPI00024833EB
UniRef90_C0GGE1            K K K L F F V C T G N T C R S P L A K V L A A A A L A R A N V T D W V
UniRef90_K1XDX3             M R L I G F I C T G N T C R S P M A E C Y F K S I I K I Y     D D I K
UniRef90_A5G3Z8      R N P G K I V F V C G G N I C R S A F A E K L L K A E A D       G S F P
UniRef90_W6LZV1        E K I Y N V L F L C T G N S A R S I L A E A T M N H L G K       G R F R
UniRef90_UPI000463E53E        N I L F L C T G N S A R S I M A E A I L N T         E G R G
UniRef90_UPI00035CA02F     K K R I L F L C T H N S A R S Q M A E G Y L R       V R Y G D R Y E
UniRef90_Q12I99           K R R V L F I C S G N T A R S Q M A E A L L R H K A D       S Y F E
UniRef90_UPI0003C42337              L G N I C R S P I A E A V F R K L V T D E N I E N K W
UniRef90_V9Z610              R V L F V C S H N A G R S Q L A A A L L Q H R A G       G R V T
UniRef90_B9DQ60              I Y F I C T G N A C R S Q M A E G Y A K D I L G       E N W N
UniRef90_B3C846                                 M K H L V S E A G L D Q F V
UniRef90_Q2W692             I N V L V L C T G N S A R S V L G E A L I N H L G G       A K W R
UniRef90_C0W502           P Y R I V M V C T G N I C R S A M A E V V L I D R V P T D G A D G V L
UniRef90_UPI00036FF095       Y N V L F L C T G N S A R S I L A E A I M N R V G Q       G R F K
UniRef90_F4H4F8        D K P S V L F V C V H N A G R S Q M A A G F L T A L S G G A       V E
UniRef90_Q24ND2      M S D K T K V A F I C V H N S C R S Q M A E A L G K H F A S       D V F E
UniRef90_UPI00047953E0       N V L V L C T G N S A R S I M G E A L I N V L G Q       G R F K
UniRef90_C3JSC1              T R I V F V C T H N S A R S Q L A A A L W N K Q S H I
UniRef90_I3R108       M S E Q T R I A F V C V Q N A G R S Q M A T A F A R R E R D E R D V G D R
UniRef90_A0A011TGF6             L F L C T G N S A R S I L A E A I L N R V G Q G R
UniRef90_A0NYX0        M S G V F N V L F L C T G N S A R S I L A E S I L R K         D G A G
UniRef90_V8CXV9              P V K I L V V C T G N I C R S P I A Q R M L E Q R S T D L G L D   W T
UniRef90_D8FUE3                              M N H L I K Q A D L D R I I
UniRef90_UPI0003B54317   S E K K R V L F V C V E N A N R S Q M A E A F       A H L H G G D A V E
UniRef90_UPI0003188409   A S G I P E V L F V C T G N S Q M A A A L L N       V E S K G K I R
UniRef90_R4LY17              P F T V L H V C M G N I C R S P M A E R L L G K L D P A A R L T D L L
UniRef90_A9W9R6               V K V A F L C R A N S A R S Q I A E A W L R V L S D       G Q V Q
UniRef90_T0JCN8           K K K V L I L C S G N S C R S I M A E A L I N D K L E         D S I E
UniRef90_V4Y605      M T A P I R V A F V C V H N A G R S Q M S A A F A E H E R E Q R D L G G V E
UniRef90_UPI00041A6836         V L F V C V H N A G R S Q M A A G Y L R S L G E         G R I D
UniRef90_A8M2K3              P F T V L H V C M G N I C R S P M A E R L L G D V G P E S A D D M L H
UniRef90_Q09KQ8               N V L F L C T G N S A R S I L A E G I L D H V       G A G
UniRef90_E8SDY2             M K I V F V C T G N T C R S P L A E S I A K Q L M P       D F E
UniRef90_UPI0004774DAF      K T V L V L C T G N S A R S I L A E A I L N H         D L A G
UniRef90_B0CD53          M K R I M F V C K H N S R R S H M A E G Y A R S M A G       D K L E
UniRef90_B6BLV3            K K V L I L C T G N S C R S I I G E A V L N K Y L D G V D A M S S G
UniRef90_Q0YUF7                      M A E G V F C D L L V R H D L H F F S
UniRef90_C6R563              F V C T G N I A R S A S G E V I S K H L A A A E Y G L E D K W
UniRef90_R9NWX5                         M A L A V F T H I A T T S G V R S H F
UniRef90_N0BGP5             P F N V L F L C T G N S A R S I I A E A I I N R V G A G K F K G Y
UniRef90_W7B5S0           M N V L I I C T G N T C R S P I A E G I L R A A R P D I L V R S R G
UniRef90_Z9JU89             S V L F V C V G N V C R S P F A E L L L R D R V P       G L A
UniRef90_E8CGG5           M N V L F L C T G N S C R S V L A E A T F N H L A P A G
```

```
                                       50            60            70            80
UniRef90_B6XVI1           V G S A G T H S L   A G H S I D P S S K A L M D A V G I N S S Q F R S T Q L T Q
UniRef90_X6AG24           L D S A A T G G W N L G E A P D P R S I A I A A R H G L D I S G Q R A R K V R P
UniRef90_S6B606           A L S A G T R P Q P     K V A D G A I A A L E L G G L P T G E L Y P K D V D A
UniRef90_B6IVN9           A Y S A G S     H P S G Q L N P A V S L L T S L K Y D L S D A R S K D W S G
UniRef90_A4J9B3           F L S A G T M A W   T G E K A S Q Q A V E V L G E Q G I E L S Q H R A M L L T P
UniRef90_B3T7B8           V F S A G L V A V D G D K A S E N S C E A L K E I G L D L T D H R S S A A T R T
UniRef90_H1Z1H1           A F S A G T E V T S V       N P Y A I R A M D E I G I D I S R Q W S K K L D E
UniRef90_F4CLZ9           V V S A G S     H P R D R I H P T V V R V L R E E Y G   L D V A A Q R P R H L
UniRef90_UPI0003B47374    V L S A G S       E P K D Q I N P V A V Q A M A E E G I D I A N S T P K I L T T
UniRef90_A6P2T3           I E S A A T S T E E I G N P V Y P P A R R K L S E H G I D C S G K R A R Q N S D
UniRef90_K2HJS6           R L E A L S A G S Q P T G E V N P N A L K V L A R H Q L P V G E V A S Q S W D A
UniRef90_K8NQV8           R F R A F S A G S T P N G R V N P F A I Q T L E S F G Y P T E G L R S K T W L E
UniRef90_UPI00035C86D6    V D S S G T G P W H V G E G A T D L S Q Q V W Q M A G Y K Y S H T A K Q F N K F
UniRef90_W9TLV0             M R A F S A G S Y P K G E V N P L A L Q A L L A A G F G V E G L Y S K S T D A
UniRef90_K1TC82           I A S A A T S R E E L G N P V Y P P A R R K L A E H G I R C D G H A A R Q M T R
UniRef90_UPI0002E35F9D    V K S A G I S T V D G I P T S E G T V K A L K S M E L D F E G Q S S Q R I N D
UniRef90_Y5PCM6           L F A M N           G Q S I T P E A L E V I L E N N L P E P S V S Q I F S Q D
UniRef90_UPI00039D02A9    V H S A G T R P       G A A V N A L A A D S V A E L G A D M S G E T P R A I D P
UniRef90_K9EWK4           V R S A G I Y A S G G R P M I N K M Q Q T L A E Y G F S V E H H S Q K I S S E N
UniRef90_D5BN48             Y Q A F S A G S K P T G M P N P H A I A V L Q S Y A I D T N F A A S K S W D M
UniRef90_I3X5E7           A Y S A G S Q P K G E     V N P L A I E T L T G H H Y P I E D L R S K S W E E
UniRef90_W8TJS6           A Y S G G T E I K P Q I N K D A V A V I K E L Y G             V D M
UniRef90_K2JHN2               S A G T R P N G A V H P M T L A L L E R N G H D I T G L T S K T F Q T
UniRef90_R6K370           M V V L F P E P Y N     P K A V A V A S R H G M I M P S N V S A Q I S N
UniRef90_E1IAS5           V R S A G T H P A P I     Q P H A I Q V M A E V G I D I G Y Q Q P K       A L
UniRef90_D3P364           A W S A G S     H P A G Q L N P H T L A T L Q A F N L P T T D L R S K S W D E
UniRef90_H5YP26           R F R A F S A G S T P K G A V H P L A L H T L E T M D Y P I D G M R S K S W L E
UniRef90_E6J781           V L S A G S A P K       D Q I N P V A V E A M A E D G V D I T S A T P K I L T T
UniRef90_H8FWB2             W R A F S A G S H P A G A V N P L T L A V L A E K G H S V E G L R S K S W D E
UniRef90_UPI00036943BE    R F R A F S A G S H P K G E V D P Q T I D L L K R L N Y R T D G L R S K S W D E
UniRef90_UPI0003B3D95F    A Y S A G S M P K G E     P H P V A L Q V L A T N G H D T S G L S S K S W
UniRef90_A0JRE4           V R S A G S       Q P A D K V N P A A V A A M A E L G I D M S A E L P K V L T T
UniRef90_U4TRC8           I A S A G I E A H G L     N P L A V Q V M A E R G I D I S Q Q R S K V F D N
UniRef90_UPI00047978D3        A Q S A G S R P S G L I N P K A V R F M A E L G Y D L S R H A S K S
UniRef90_U7GJ59           R F R G F S A G S H P K G E V H A N T L D L L N R L N H D V S A A R S K S W D E
UniRef90_UPI0003B61010    V H S A G T       E P G H F T N Q L S A E V I A E L G A D M T G E T P R L I D P
UniRef90_Q2SPK8           L W S V A S A G S P A G R I P D T L A A L T E R G L P T E G L H S K S W N E
UniRef90_Y1JWM4           A Y S A G T     H P R G E L H P M T T L F L Q Q H Q I D T S T L S S K S W L L
UniRef90_A7NLK8               S A G T A P A S V     Q P L A I Q V M A E A G I D I G Y Q R A K R I A D
UniRef90_A8LEZ3           V R S A G T A G K W S R R P A H A T M T A V A A R H G Y D L S A H R G Q Q V T P
UniRef90_A8MKL8           V Y S A G T K N Y H E     V K P L A V K V M D E V G I D M A D H Y P K L L E D
UniRef90_F5RAB7             F R A F S A G S A P S G T V N P F A L Q A L A E Q G V D I A G V R S K A W D E
UniRef90_A9ATJ8           A Y S A G S R P A G V     V N P F A I E Q C A A L G Y D T S Q L R S K S W D E
UniRef90_V9XIN4           A H S A G T R A M   V G Y G M E P T A A L V L Q Q L G G D P D G F A A R R I T P
UniRef90_A6TK49           V L S A G V S A A S   G E P A S G A V E V M N E K G I S L G Q H R A T P I S K
UniRef90_R6YB19           V Y S C G I Y A D S   G E P S T Y N A I E I M K E Y G I D M K N H R A S K E T N
UniRef90_A4JQJ6           L I A L A       G R P A A Q A A I D A M R A R G F D L T P H I A Q P V H H
UniRef90_Q07VY5           V F S A G T S P       E Q V D V R T I E A I T R F G I D A G D L V S K H L Q T
UniRef90_UPI00024833EB    V E S A G T V N Y Q V G R K P D P K A L S V A E Q R G Y S M S N L R A R Q V C D
UniRef90_C0GGE1           V D S A G M Q A F S   G Q S A S G A M A V A R E M G L D L S L H Q S R L L T E
UniRef90_K1XDX3           T F S A G L S A   G Y G W R A A N E S I R M M R K L N L D L S Y H I S K P L S D
UniRef90_A5G3Z8           V I E S C G I D V E V R S P S P C E A V C A A G K I G L D L G H H L S R E R C D
UniRef90_W6LZV1           A Y S A G S       F P A G Q V N P F S L K L L E L Q G L P T A G L R S K S W N E
UniRef90_UPI000463E53E    R F Q A F S A G S R P K G A V H P L A L K V L A A Q G Y P V E G L H S K S W D A
UniRef90_UPI00035CA02F    A H S A G T K P A S V     H P A A V A V M R E I G I D I S G Q R A K       H L
UniRef90_Q12I99           V C S A G T D A A E A T D V V D E R A L S A L T Q L G I N T Q G L V P K S I A Q
UniRef90_UPI0003C42337    M T D S G A V S W N V G R S P D A R A L S C L R N H G I E T A H K A R Q I T K D
UniRef90_V9Z610           V S S A G T     H P G T A V E P H V A Q V L T E A G A D V T A A F P K P L T D
UniRef90_B9DQ60           V Y S G G I E S H G V         N P L A I E A M K E D G I D I S H Q T S
UniRef90_B3C846           I D S A G I L S Y H Q G E L P D S R M R A H A I R R G Y E L T H R S R P V R T E
UniRef90_Q2W692           A Y S A G S R P V G       R V N P L S L E V L A E K G L P T A G Y R S K S W D E
UniRef90_C0W502           V T S A G V S D E E L G N P V D R R A R V L A N H G Y A T H A H R L S D R E
UniRef90_UPI00036FF095    A Y S A G S Q P K G E     V H P K A L A L L K N L N Y N T D F A R S K D W T E
UniRef90_F4H4F8           V R S A G S A P       A D R V N P V A V E A M A E V G V D I T A E Q P K V L T T
UniRef90_Q24ND2           S Y S A G T E T K P Q I N Q D A V R L M K E I Y N             I N M
UniRef90_UPI00047953E0    A Y S A G S Q P M G       R V N P F A V E Q A Q I G Y D T S T V R S K S W D E
UniRef90_C3JSC1             P A A S A G T H P A P R I H S G A L A A A R R H D L P L D A T R P A D V A D
UniRef90_I3R108           I D I V T G G T D P A D H V H D E V V E V M S E D G F S L E N E T P R A I S Q
UniRef90_A0A011TGF6         F R A F S A G S Q P K G E V H P F A I Q L L E S L E F D T S F A R S K G W E E
UniRef90_A0NYX0             F R A F S A G S P A G A V R P E A L L S K L N F K T D G L R S K D W A E
UniRef90_V8CXV9           V S S A G T R A M N   G H D M H P E S A R A L R D L G L D P G T F A S R L L T P
UniRef90_D8FUE3           C D S A G T G G Y H V G N P P D R R M A I A A S K R E L E L R G S A R K Q R S D
UniRef90_UPI0003B54317    A L S A G S R P S G V     I N P K A I R F M A E V G Y D L A A H A A S K S L D E
UniRef90_UPI0003188409    V R S A G S M P T       S E L D A N V V T V K E M G L D L S R E Y P K P L T D
UniRef90_R4LY17           V R S A G T G G W H E G E E M N P A A R Q I R V R G G N V E G F A A R K L T G
UniRef90_A9W9R6           A M S A G T H P Q A V     H P L A I T V M A E V G I P L D Q Q V S K S I T M
UniRef90_T0JCN8           A Q S S G V K A S G A     V N P N A K A L L E M K G Y W R E K Y H S K V I E T
UniRef90_V4Y605           I L S G G T R P     A T H V H E V V V T A M R E D G F D L S D R T P R E I S T
UniRef90_UPI00041A6836    V R S A G S       M P A D Q I N P V A V A A M A E E G I D I T A E Q P K V L T V
UniRef90_A8M2K3           S H S A G T G G W H A G E E M N P P A A R Q V T G R G G S T D G F A A R R S E H
UniRef90_Q09KQ8           R F N A Y S A G S H P K G A V H P L A L A T L R H M H M R D T G Y R S K A W D E
UniRef90_E8SDY2           I V S R G L M A Q E   G Q P I S S H S R E L L Q R H E L P I P K G A Q L F D A G
UniRef90_UPI0004774DAF    Q V R A L S A G T R P Q P K V A D G A I A A G L P T D G L Y P K D I D S
UniRef90_B0CD53           V A S A G L         D G S Q V D P L T I Q V M Q E E G I D I S N H T S N A L T E
UniRef90_B6BLV3           V K A S G             K V N P N A K K V L E A N G L W R D D Y H S K T L D K
UniRef90_Q0YUF7           V S S A G T V S Y G E G S P P D D R A I A V L Q P L G I D I S S V R A R R E H D
UniRef90_C6R563           I F S A G T G A L V G H G Y E A N E L L V A N E L L Q P L G I D L S S R A R Q E Q I
UniRef90_R9NWX5           N M S C G T A A Y H T G E E P D E R T T E L C Q R R N I P I D L S N T A R P H D
UniRef90_N0BGP5               S A G S M P K G Q V H P S T I N L L N K L H Y D T A A L R S K S W E E
UniRef90_W7B5S0           L N A E E G A P L S T G     A R Q I L Q D K G L L F S H E A H L L H Q E
UniRef90_Z9JU89           V S S R G T Y A L V G Q G M E R Q M A Q L A L L G V G S D G F R S R Q L Q V E
UniRef90_E8CGG5             W R A M S A G S H P A G Y V H P R A L A L L A R E G I S T E G Y F S K S W N D
```

```
                                        90              100             110             120
UniRef90_B6XVI1         D D N S D L I L C F E P E Q R H N I V V I A P T A L P Y T F T L T D F S N M C A
UniRef90_X6AG24         F S R F D L I L G M D R Q N V R D L K A L A P G A R E R I H L L A E F A Q G K T
UniRef90_S6B606         V M K A I D L V V T V C D N A R E A C P V F P R A I P A I H M P F H
UniRef90_B6IVN9         F A           G P D A P A L D F V I T V C D Q A A G E V C P I W P G Q P M T H
UniRef90_A4J9B3         E T E A D L I L T M T E N H R Q Q I I R Q A P E S Q G K V F T L G D Y V G E N G
UniRef90_B3T7B8         T L Q N A S A I F C M T E S H R A L M N M Y F E L P E N I Y L M R E F E T A D D
UniRef90_H1Z1H1         F F G V E M D L L V T C D S A V G T C P M F P W A K E K I H     A G F S D P S A
UniRef90_F4CLZ9         E A F A G Q R F D V V V T L C D R A R E V C P E F G G A A R           Q V H
UniRef90_UPI0003B47374  E A V K D S D V V I T M G C G D                   T C P I F P G K R Y E D
UniRef90_A6P2T3         Y E K Y D L L I G M D R A N L R S M Y R I C G G D F A D K M H L L M D F T N R P
UniRef90_K2HJS6         F A D Q S F D L V V T V C D N A A G E S C P V W L G K T L K A H W G V A D P A P
UniRef90_K8NQV8         F         S Q P D A P V M D F V F T V C D N A A G E V C P V W P G H P A V H
UniRef90_UPI00035C86D6  F A K H D L I L A M D L S N R D S I L K M A E S D K V F M F R S F D P E D A H L
UniRef90_W9TLV0         H Q A L A P D I V I T V C D K A A G E A C P V F F G P A T R C H W G L S D P S D
UniRef90_K1TC82         Y E E F G Y L I G M D R M N L S N M A R I C G G D P E G K C S L L L A H A G Q S
UniRef90_UPI0002E35F9D  Q D W A D L I L T M T R Q H K Q V V A T Q Y S R A F E K L F T L K E Y V S D D A
UniRef90_Y5PCM6         D L K S D L I L T M T N S H K R Q L I S Q F     G T E Y P I Y T L C E Y V S E T G
UniRef90_UPI00039D02A9  D L L R R A G R V I V L G D E A Q V E P V D G M S G T I E V W H T D E P S Q R G
UniRef90_K9EWK4         L T W A D L I F T M T R P Q K F V L I S M V P A I A D K V Y T I Q E Y I G H P A H
UniRef90_D5BN48         F A           G D A F G K M D I I I T V C A N A A G E T C P I W P G H P I T H
UniRef90_I3X5E7         F A G D A P E M D F I F T V C D N A A G E A C P V W P G Q P V T A H W E D P V A
UniRef90_W8TJS6         N Q T Q H S K L I K E L P E I D I V V T M G C N V Y C P   F L P C N H M E D W G
UniRef90_K2JHN2         E D T P A F D F V F T V C D L A A S E E C A P W I G Q P L S A H W G L P D P V K
UniRef90_R6K370         D D F S V D T L V L T M N S M K Q K M Y D T F D K A I N V F T L G E L A G E G E
UniRef90_E1IAS5         D Q V G E L Q P D V V V T V C D I A R E E C P L W P E V G R S L H W S I P D P V
UniRef90_D3P364         F           S G P D A P V L D F V F T V C D Q A A G E L C P A W N G T P L T H
UniRef90_H5YP26         F A       A P D A P V M D F V F T V C D N A A G E A C P L W P G Q P M T H
UniRef90_E6J781         D A V R A S D V V I T M G C G D A C P           V F P G K R Y E D
UniRef90_H8FWB2         F A       D P D A P R I D L I I T V C D N A A G E M C P I W P G R P K I H
UniRef90_UPI00036943BE  F A       A P G A P K L D F V F T V C D D A A H E I C P T W P G Q P M T H
UniRef90_UPI0003B3D95F          D V Y A R D D A P E M N L V I T V C G N A A G E V C P I W P G H P L Q H
UniRef90_A0JRE4         E A V K E S D V V I T M G C G D                   T C P I F P G K R Y E D
UniRef90_U4TRC8         D Y L L H S D L V V T L C G   D A R D R C P V T P P S V Q H R H W P L P D P A Q
UniRef90_UPI00047978D3          L D D I D G E F D A V V T M G C G D S C P W V K R R E D W N L P D P
UniRef90_U7GJ59         F A V E G A P K       M D F V I T V C D Q A A A E Q C P Y W P G Q P M T H
UniRef90_UPI0003B61010  D L V Q A V D D R V V V L G N E A H V E P M K G M T G T I H T W H T D E P S A R G
UniRef90_Q2SPK8         V K D F H P D V V I T V C D   Q A A G E S C P   V W F G Q A A K L H W G L P D P
UniRef90_Y1JWM4         F A H A P K M D F I F T V C D Q A A G E S C P A W P Q P I T A H W G F S D P A L
UniRef90_A7NLK8         V I E P A P A V V V T V C D L A R   E E C S A T L D A P L C L H W S I P D P V A
UniRef90_A8LEZ3         E A W A D A V L A M D A K N L T D L K P L T I Q T S T T A V L Y L         G D
UniRef90_A8MKL8         I P R E V D I L I T M G C N V S       C P S V P C S H R E D W G L K D P S G
UniRef90_F5RAB7         F A R A P Q M D L V I T V C D A A A G E T C P V W P G H P A T H W G Y A D P S L
UniRef90_A9ATJ8         F D A P Q M D F V L T V C D A A A G E A C P V W P G R P I T A H W G F E D P A A
UniRef90_V9XIN4         P I A E D S D M I I T M S H R A K V I Q L A P R R M R V T F T L R E
UniRef90_A6TK49         S D E A D L V L T M T A N H K K V V L E I H P K A K D K V Y T L K E Y T G T V D
UniRef90_R6YB19         I E Q M D L I L C A T V S H K Q L V L N M Y P D L V G K V Y T I K E Y V G G R N
UniRef90_A4JQJ6         V R A S Q L I L A M T L V Q C R E I E R R Y P F A R G R V       F Q L D H A T K
UniRef90_Q07VY5         F A G K D F D Y V I T C D K A N N E C R S Y P G A G K Q     L A W D F P D P K N
UniRef90_UPI00024833EB  F E K F D L I F A L D K A N L A D L I D I C P R H K E K L S L F L S H S H I G V
UniRef90_C0GGE1         E A E A D L V L V M R T H K Q A L L S A A P G A A S K V Y V L K E F V G E D G
UniRef90_K1XDX3         E M E A E M L I V M T Q M H K E K L L A T W P G A V N K V F I L R E F P D F E D
UniRef90_A5G3Z8         L E G A D L I L A M E Y R Q Y R K L I E S F P H K G R Q I K L L R E F A P F P E
UniRef90_W6LZV1         F A           G P D A P L L D F V F T V C D N A A N E V C P F W P G Q P M S H
UniRef90_UPI000463E53E  F P G A P A F D F I F T L C D S A A G E A C P I A R G A A K R H W G I E D P A A
UniRef90_UPI00035CA02F  S E F A G K E M D L V V A V C E S A R G A C P F F P W K E V L H V E F P D P S Q
UniRef90_Q12I99         F A T Q R F       D F V I S L C D K A S Q E C R S Y A G A G Q Q Y A
UniRef90_UPI0003C42337  D F T F D Y I L C M D E S N L R D L K R K S N Q V K N C I E L L G A Y D P Q K Q
UniRef90_V9Z610         E V V Q A A D I V I T M G C G D A       C P V V P G R R Y L D W P V P D
UniRef90_B9DQ60             D K I T E Q D L K S A D L V I T L C D H A D K N C S V V S S N V Q R M H
UniRef90_B3C846         D F Y F D L I I G M D D R N I D D L K D R A P E E W K K I H R M T E Y C T R H A
UniRef90_Q2W692         F A A A       D A P R M D L V I T V C D N A A G E V C P V W P G H P S K H
UniRef90_C0W502         L A D A D L L L A M T C G H R E M T R R A D A S R I R M F R E L D P H A L A Q
UniRef90_UPI00036FF095  F A       N P D S P K M D F V F T V C D N A A G E A C P V W P G Q P M T H
UniRef90_F4H4F8         E A V Q A S D V V V T M G C G D A       C P F F P G K R Y E D W         V
UniRef90_Q24ND2         E L T Q R S K L L E D I P P V D V V V T M G C N V N C P   Y L P C K H R E D W G
UniRef90_UPI00047953E0  F S Q P D M D I V M T V C D S A A G E S C P L W R G S P I K V H W G F A D P S H
UniRef90_C3JSC1         V L A P G D M V I A V C D N A H E E M R E N P N S             L H
UniRef90_I3R108         D D I M D V D I V V T M G C S A E               G I C P M T W R G D A R D W A
UniRef90_A0A011TGF6     F A A P G A P E M N F V F C D D A A N E S C P V W P G Q P M T H W G V P D P A A
UniRef90_A0NYX0         F A           V P D A P V M D F V F T V C D N A A K E T C P V W P G Q P M S H
UniRef90_V8CXV9         P L I A D N D L C L A R E H R A A A R Q L A P I R W R S I I T L R E D P N A A S
UniRef90_D8FUE3         F E N F D L I L A M D K D N Y Q D I L S L D P H Y R D K V R L M C E F C Q K Y D
UniRef90_UPI0003B54317  I D G E F D A V I T M G C G       D S C P W V P A R R R E D W A L P D P K H
UniRef90_UPI0003188409  D V V R A S D V V I T M G C G D S C P           I Y P G K R Y E D
UniRef90_R4LY17         A Q G A D L I L T A T A D Q S E Y V H A L V P G T T H R T F L R A D A E P L P A
UniRef90_A9W9R6         I I D Q R P D L I V T C D I A R E E C P V W P E A A R H I H   W S V A D P V A
UniRef90_T0JCN8         V L D T P F D L I V T C D H A K E T C P M F P R A V K T I H M G F D
UniRef90_V4Y605         A E L D S C R Y V A T M G         C S T L D L D T H D S T V E I K D W A
UniRef90_UPI00041A6836  D A V R E S D V V I T M G C G D A C P           I F P G K R Y E D
UniRef90_A8M2K3         I D A A D L V L T A T A D Q Q E F V A A L R P D A G S R T F V L G E F G P L P A
UniRef90_Q09KQ8         F A V S G A P R       M D F V I T V C D Q A A G E V C P I W P G Q P I T H
UniRef90_E8SDY2         D A E A D L I L T M T T A H R Q M I Q A M Y   G P Q V N V Y A L N D Y V D E   D
UniRef90_UPI0004774DAF  V L D A S I D L V V T C D N A A G E S C P I F P R V T R I H L P F H
UniRef90_B0CD53         F K P E D F E A V I S L C G C G V       N L P E A W V T R P I F A D W       Q
UniRef90_B6BLV3         V I D I E F D L V V T     V C D N A M E S C P       I F P K N T K V I H I G
UniRef90_Q0YUF7         L H E Y D W I F T M D H E N Y E E I I T F F P S H Q P R I H R V L E F E G R S G
UniRef90_C6R563         I E N A T I L V A E K V H A D W I V F W P S K I K L S Y G A R P L D I
UniRef90_R9NWX5         F D T F D V I F G M D T N N V R N L K R M Q P P G S K A K V R L F G D V D D   G
UniRef90_N0BGP5         F           S A P D A P K M D F V F T V C D N A A N E A C P F W P G Q P M T H
UniRef90_W7B5S0         D M W A D K I F V M T S A Q L A L L R S V F P A E E K K M A L       I S P D D
UniRef90_Z9JU89         D L S A D L V L V M S G R Q R N L V L E E S P A A A R R T G L L G H L P E P A G
UniRef90_E8CGG5         L P Q T P D I V V T V C S N A A   G E T C P A W L G N V M R H W G V D D P A H
```

```
                              130              140            150
UniRef90_B6XVI1         A T I P D P Y R K E A F R S A A R A T N D A I R N I L R S I I
UniRef90_X6AG24         R D V P D P Y Y A E A F A S V Y R M I R E A S E A L A T R L V A R A S
UniRef90_S6B606             D P H G E P L E S F V K V R D E I R A       K L I P E L K Q R F S I E
UniRef90_B6IVN9         W G F P D P S A V T G P E A V Y R M I H R R L E I F V N
UniRef90_A4J9B3           D V S D P F G S E T Y R R C A G E L K N L I S K A L D K L S K D S
UniRef90_B3T7B8         K E L P D P F G H E V Y R Q C R D K M I E A L P P I L E W V E K N L
UniRef90_H1Z1H1         A S G S D A E V M E V F R G I R D E V T G F I D E
UniRef90_F4CLZ9         W S L P D P A G G D D F V A S A R A I A T R V R H L V P T L
UniRef90_UPI0003B47374  W E L D D P A G Q D A V R P I R D D I K S R I Q A L L A E I L
UniRef90_A6P2T3         G E V A D P W Y T D D F D T T W R D V E E G C R G L L H H I Q L Q S A I H G
UniRef90_K2HJS6         V Q G D E D T V A R A F E R T L R A L Q V R
UniRef90_K8NQV8         W G I D D P A K V T G F V A A F R Y M K S R V D A F V
UniRef90_UPI00035C86D6  L S V P D P Y G Q D E Y Q K V L A M V E R A A N G I
UniRef90_W9TLV0         V N G S E A E I N A A F A A T I Q Q I Q K R V S A F I A
UniRef90_K1TC82         G D V A D P W Y T G D F E A T W Q D V N I G C R A L L K E L T E K K
UniRef90_UPI0002E35F9D  D E K W
UniRef90_Y5PCM6             E I D D P F G G D T Y R H T F N Q L Y       S L I S K L K H E
UniRef90_UPI00039D02A9  I E           G M E R M R L V R D D I A D R V R D L L N
UniRef90_K9EWK4         Q D I P V P H G L Q A Y R Q C A E F I Q Q S C V L L Y R E L C Q
UniRef90_D5BN48         W G V E D P A I D A A F A L T Y A Q M D A R I
UniRef90_I3X5E7         V E G T D A E K R V A F A T T L R Y M K L R I A A F A A
UniRef90_W8TJS6         L E D P T G K D K D A F L Q T A E I I R Q K V L D L K E R I E K
UniRef90_K2JHN2         V T G T E A E K A L A F A Q T Y S Q L F H R I K A F V A
UniRef90_R6K370         V E V P D P Y G K E E Y N R C F E Q L Y S L V A K V V D V I T
UniRef90_E1IAS5         A A A P G E A Q L A A F R H A R D D L H Q R I T S L L L L L T Q N
UniRef90_D3P364         W G V E D P A A A T G F R R T Y V E L E S R I K I F L D R L S L Q S S L H A
UniRef90_H5YP26         W G I E D P A A V E G F N A A F R Y L K N R I G T F V N
UniRef90_E6J781         W E L A D P A G Q E A V R P I R D A I K R R V S A L I S E L L E
UniRef90_H8FWB2         V G F P D P A A A T G F R E V Y G Q I E A K I R R L I A
UniRef90_UPI00036943BE  W G V P D P A R F E G S A A V Y R M L A N R I A V F V N
UniRef90_UPI0003B3D95F  W G V P D P A A I E G F E T A Y R S L R M R V E Q L V A       L D L K G
UniRef90_A0JRE4         W E L E D P A G Q A V R P I R D D I K A R I E D L I A S L T
UniRef90_U4TRC8         A T G S P A A V L A V F R A V R D A I E A D V R T L
UniRef90_UPI00047978D3  K H M D D           D G Y R A V R D D I G A R V K R L L E S L
UniRef90_U7GJ59         W G L A D P A A A Q G F S D A Y R M L R N R I S I F V
UniRef90_UPI0003B61010  I E           G A E R M R L V R D D I D A R V R T L L A E
UniRef90_Q2SPK8         S K Q T D P Q K R H Q F E Q V I N M L E T K L L L L V K V S R Q Q
UniRef90_Y1JWM4         F K G T E E Q K L K E F S R I Y K E I S N R I R I F M
UniRef90_A7NLK8         V S G S E S E R L A A F R A A R D E L R L R V E G L L
UniRef90_A8LEZ3         R D V P D P W G G E A F T A C L R I I E A G A A R H L
UniRef90_A8MKL8         G P I           E E F R N T R A T I Q M K V E D L I K R V E N Q A
UniRef90_F5RAB7         V A G S D A A R L T A F R D T L A L I R R R L E I L I A
UniRef90_A9ATJ8         C A G S D D E K R S V F D K V R R Q I A H R V S R F L A
UniRef90_V9XIN4
UniRef90_A6TK49         S D I S D P F G Q
UniRef90_R6YB19         M D I K D P W G T E A Y K Q C A E E I K Q C M S L L
UniRef90_A4JQJ6         R D I E D P V G K S A F D A V A A H I E R A V A Q W I A R I
UniRef90_Q07VY5         R A G E Q P       F F L T L H D I N N R L T M F L
UniRef90_UPI00024833EB  T E V P D P Y K G N M F E R V L E L I E S G A Q G I I E H I S K Q Y Q L K
UniRef90_C0GGE1           D V A D P F G G G E Y S H A A R E L E G L M P R L V E K L A K
UniRef90_K1XDX3         L N I M D P V G C E I Y E K C F D L M K V P L E R L G E I L C K K Y Q
UniRef90_A5G3Z8         C N I D D P F G E R A F E K C F A Q I Q R S I S A I
UniRef90_W6LZV1         W G V E D P A A V E G F R A A L R A L E N R I Q I F I N
UniRef90_UPI000463E53E  V E G T D A Q K Q L A F V Q T A Q F L K I R I K A F L
UniRef90_UPI00035CA02F  A T G S E A E I M E V F R D A R D R I T T W I D A
UniRef90_Q12I99         W D I A S P K S R G G F L A T L D D I S H R L D L F L R
UniRef90_UPI0003C42337  L I I E D P Y Y
UniRef90_V9Z610             P D G A P I A V V R T I R D Q I N T R I T D L L A S L
UniRef90_B9DQ60         W G F E D P A G K D K F Q E V R D N I K K R L Q Y F K E
UniRef90_B3C846         D H V P D P Y Y G E G F E Y V L D L L E D A C A G L L D R I S Q
UniRef90_Q2W692         M G F P D P A D A K G F R K V Y A M I E A K V R R L I Q
UniRef90_C0W502         R D V P D P W Y G E D F V E T L E V V E R V S D A L T P A L V E
UniRef90_UPI00036FF095  W G I P D P A A A T G F D D A Y R M M N A R L S I F L D K L S L Q N R L
UniRef90_F4H4F8         L E D P A G Q G I D A V R P I R D E I R T R V L G L L D E L
UniRef90_Q24ND2         L D D P T G K S D E E F K K V I S T I E T K I K E L K E R L K
UniRef90_UPI00047953E0  V N G S D D D K R A A F A I T F A Q I R K K V E A L M Q
UniRef90_C3JSC1         W S I P D P A R T G A F D R A F D D I D H R V A R L A P H C L P N G E L
UniRef90_I3R108         L D D P D G Q E L D A V R E I R D D I E R R V S A L F D E V V
UniRef90_A0A011TGF6     A E G T D A E K H L A F A E T Y R M L K S R I D I F L D R L A L Q R R L
UniRef90_A0NYX0         W G L P D P E R A V A F N D A F R M L S N R I S V F L D R L S L Q K R L
UniRef90_V8CXV9         L D I A D P L G A A E F D R A A A E I A D A V E A A I A V I
UniRef90_D8FUE3         R E V P D P Y Y G E G F D R V I D L L W D A C E G L L E Y V T K E K
UniRef90_UPI0003B54317  M D D A D           Y R R V R D E I S T R V K T L L A S L
UniRef90_UPI0003188409  W E L T D P A G Q D T V R E I R D E I H E R V K T L V A S L T K E A T L
UniRef90_R4LY17         D D L D D P W G R G D F Q R I A D D I E E S L H P L V D V L L
UniRef90_A9W9R6         I Q G T A D Q R H A A F V A A R E E L R E R V R G L L A L L
UniRef90_T0JCN8             D P S G K E E Y E R T L D L M E K E L
UniRef90_V4Y605         L E D P G D Q D L N R V R E I R D E I R S R V N R L F D E I E R E L S A N A
UniRef90_UPI00041A6836  W E L D D P A G Q E D V R P I R D E I R S R I A S L I E E I A
UniRef90_A8M2K3         D D L D D P W G R G D F G R V A D E V E E T V R P L A A A L L
UniRef90_Q09KQ8         W G L P D P S D V E G S E D V R Q
UniRef90_E8SDY2         L P V E D P Y G G Q
UniRef90_UPI0004774DAF      D P H G E P L E S F I E V R D A I R A R L
UniRef90_B0CD53         L D D P A G Q S I E V F R T I R D Q V R Q H V K T L V E T V
UniRef90_B6BLV3         Y E D P D G K E Y S A F E K T L K L I K
UniRef90_Q0YUF7         D E V A D P Y Y G R E F E G V A E D L S L A C E Q I L E R M F E H Y
UniRef90_C6R563         D R L E D P Y R R G A A K V A V D E V E Q S L R V I L P W L A Q A H R
UniRef90_R9NWX5         K P V A D S Y Y T N D F E A T Y R Q V E R Y S R A F L K E L G L N H S A K A
UniRef90_N0BGP5         W G V P D P V A A E G F A D T Y R M L N N R I S I F
UniRef90_W7B5S0         E D V P D P F S G G E Y Q A A F S A L E T A V E R F L
UniRef90_Z9JU89         R D I P D P Y R R S E Q A A A A R M I Q E H V T A L A A L L R R
UniRef90_E8CGG5         A T G S D A E I D A A F
```

```
                            1         10        20        30        40
UniRef90_W8WY87                                        M F Q H L V D E A G L S D I A
UniRef90_UPI00034C2416             V L F V C V L N A G R S Q I A A A L L R H L A G     D R V Q
UniRef90_UPI00041254F3     M S A P F T I L H V C T G N I C R S P M S E R I L     D G L T G D D V L
UniRef90_A0A031JYG1        M S A M F N V L F V C T G N S A R S I L A E S A L N K L G E G R
UniRef90_V2US51                  K L L V V C I G N I C R S P M V E Y L L K R E F P T L E V S S A G
UniRef90_J0SBL2                K R R V F V C T H N A G R S Q M A E G Y M N A     R Y G D R Y E
UniRef90_UPI000462E395           M V E V A F I C I H N S C R S Q M A E T I G K D L L G     D I A Q
UniRef90_T0QM65              M V L L L F V C T S N T C R S P M A E A L A K R W L R E H P V P G L R
UniRef90_UPI000348282B     M S D R I N V L F L C T G N T A R S I L A E S I L R K     D G A G
UniRef90_B4UGE2                P R H V L F L C V A N S A R S Q M A E G I A R S L A P     A T V K
UniRef90_F2JLJ0             N K P K V A F I C V H N S C R S Q M A E A L G K H L A A     E V F E
UniRef90_Q2IPR3          R A A P P R H L L F L C V A N S A R S Q M A E G I A R A L A P     A S T R
UniRef90_A0A031JAB9        M T D K I N V L F L C T G N S A R S I L G E A I M N K L G E     G R F K
UniRef90_R8VZP4            M N Q K P K V A F V C V H N S C R S Q M A E A L G K L L A S D
UniRef90_U4TE44             N K K K V L F L C T S N S A R S Q M A E T L L K Y K A G     D V Y E
UniRef90_UPI00042940FA       M I K V L F V C V H N S A R S Q M A E A F L N D L G K     D Y F I
UniRef90_B8GF35            K K R I L F I C S H N A A R S Q M A E G Y L R E K     Y G D R Y E
UniRef90_M0FF40                P T R V A F V C V Q N A G R S Q M A T A F A R R R A D R G V V D R I E
UniRef90_K0V4D2                   S V L F L C T H N A G R S Q M A M G F F A H L A G D R
UniRef90_K0EXY1             M P H K P S V L F L C V H N A G R S Q M A A G F I S A L A G     D R I E
UniRef90_A5EMZ2                  Y N V L F L C T G N S A R S I L A E S I L R K     Q G A G R F R
UniRef90_UPI0003F711D5      S G K A E V L F V C V Q N A G R S Q M A A G L L R H Y G E     G R I N
UniRef90_D3NYB6                  Y N V L F L C T H N S A R S V M A E C L L N R     D G K G
UniRef90_UPI0004625B3B      N K P K V A F I C V H N S C R S Q I A E A L G K H L A A     D V F E
UniRef90_L9WXV9               M N V A F V C V Q N A G R S Q M A A A F A E R E R V N R T L E     G
UniRef90_A0A010Q5W5      M T E T Y A L L A V C T G N I C R S P A M D R L L A H E L G S Q     P G I T
UniRef90_K1XTN1               K I I F V C I H N S A R S Q M A E A F M K K     E C S D Y F D
UniRef90_I5B753             K K T I L L F V C E M N T C R S Q M A E G W A H Y L Y P     D K I N
UniRef90_A9IET7                 L F I C T G N S A R S I L A E G L H N G L G N     G R F R
UniRef90_K2PYI3             M L K V A F I C V H N S C R S Q I A E A L G K Q I A G     D K F E
UniRef90_W6X7Z6              R V L V V C E G N I C R S P L A C A M L A A S F P     D I R
UniRef90_G2T713              N V L F L C T G N S A R S I L A E S I L N R     E G A G
UniRef90_UPI000479C920       K P R V A F I C V H N S C R S Q I A E A L G K H L A C     D V F E
UniRef90_A0A059MIR2     A V A K D V P E V L F V C V H N A G R S Q M A A A L L D H R A G     G R V H
UniRef90_UPI0003B51453      G P P E V L F V C V Q N A G R S Q I A A A M L R H L A G     D R V R
UniRef90_Q5YYM7               P M H V L F V C N G N V C R S A I A E R L T R A I A V E H R L P G L T
UniRef90_B4R9T7          E K T Y N I L F L C T G N S A R S V I A E A L M N K     E G R G
UniRef90_UPI000476CFCD         M F V C K K N S R R S Q M A E G F T R I F G S     G K V E
UniRef90_A0A021VR26                         M A E V V L R D R F E R A G L G D V V
UniRef90_Q21BP5         M A E R I Y N V L F L C T G N S A R S I L A E S I L R K     D G R G
UniRef90_UPI00036DF5BA        A P Y N V L F L C T G N S A R S I L A E A A I N S L P V S R     E R F R
UniRef90_E2ZZ27          M T D R L R V L F V C I A N D A R S L I A E A I L R H     T D G E H F A
UniRef90_UPI000363C3FE     S D T F R I L T V C T G N I C R S P A M E F L L A Q A L     E S D P R F H
UniRef90_Q0G3I6              M R N V L F L C T H N S A R S V L A E A V M N A     E C E D R F D
UniRef90_T0GQB0                 Y N V L F L C T G N S A R S I L G E V L M N H L G G G R
UniRef90_UPI000372F933                                              D R I I
UniRef90_M0AGD0          M S Q N I T R I A F V C V Q N A G R S Q M A F A F A E R E R N V R K L A D
UniRef90_UPI000466716C      E K T L N V L F L C T G N S A R S I L A E S I L N     G E G N G
UniRef90_N6YCK8          M S D K I N V L F L C S A N S A R S I I A E V I L N Q I G K     G R F Q
UniRef90_U5ULF1               I Y F I C T G N S C R S Q M A H G F A D N I L D     S N W D
UniRef90_X0V1V0         A D S H D P L N V L F L C T G N S A R S I L A E S I L N R K G K G R F R G F
UniRef90_D5WEQ6               T N V L I L C T H N S A R S V L G E G M L N H W A Q K L G K D   V R
UniRef90_M5TFD1           S H M T R V L F L C T G N S A R S V L A E A T L R A W G G D H
UniRef90_UPI000465FAE7         Y N V L F L C T G N S A R S I I A E A I L N R V G A     G R F K
UniRef90_A4T7G4          M T P K P S V L F V C V K N G G K S Q M A A G L M R R L A G     E E I D
UniRef90_UPI00035DECD1         V L F V C V A N A G R S Q L A S A L M R H H A G     D R V V
UniRef90_UPI00046A0E0F     S A L P Q V L F V C V A N A G R S Q L A A A L V N Q L A P G K V V
UniRef90_UPI0004672B57         I L F V C V R N G G R S Q I A A S I L K Q L A G     D R L N
UniRef90_J3B3Y6          M S E K F R V L F V C A K N D I R S L M A E S L L K H     T D S E H F E
UniRef90_H0JX24        A I T K D V P E V L F V C V R N S G R S Q M A A A L L A H     H G V G R V H
UniRef90_UPI00046980F7        P Q S V L F C C D H N A V R S P M A E G L M K Q M Y G M     D V V Y
UniRef90_D5PGE4          M A E P R L H V A F V C V H N A G R S Q M A A A L F A E Q L R E R G L S D V V
UniRef90_M3FYK8                 S V L F V C V H N A G R S Q M A A A G F L T H L A G     D R I E
UniRef90_UPI000378EDC9   A M G E R P Q S V L F A C T L N T V R S P M A E A I A R H Y     F G
UniRef90_UPI000360A443                             M N H L V A R S G L D R I I
UniRef90_UPI000371A2A9       D K P S V L F V C V H D A G G S Q L A A G W L R H F A G     D T V E
UniRef90_M0M4L7              T R V A F V C V Q N A G R S Q M A S A F A E R E R D Q R G L D D L A
UniRef90_K1M2V3         M K K Y D K L T F I S R S D T C R A P M A E A L M Q A K L     L L E D I L
UniRef90_C6LIL6               P F N V L F V C T G N S A R S I L A E A I L N R     A G A G R F V
UniRef90_K2NW34              T N V L I L C T H N S A R S V L S E G M L N H W A R T L G K D   V R
UniRef90_B2UH89              N V L I V C H A N V C R S P A A E M L F K A R A P R S G A A P I A
UniRef90_D5W832          M S R P T   V L F V C V H N A G R S Q M A A G Y L Q H L A G     D R I D
UniRef90_UPI00034BECCF  A I T T G V P E V L F V C V H N A G R S Q M A A A L L N A H A A     G R V H
UniRef90_H6RPZ9              M K K V L F L C T G N Y Y R S R F A E K L F N D L A S Q K N L S W S R
UniRef90_K9RGQ2          M K K Y N K V I F V C N G N T C R S P M A A T I F S S     V K N D D K L L
UniRef90_R7ANH8          M A H K P R V L F V C V H D A G R S Q M A A G F L E A L A G D R
UniRef90_Q5YR80              M P T V L F V C V H N A G R S Q M A A G I L R H L A A     D S V Q
UniRef90_UPI0003805BA1    G R F S V V M V C T G N I C R S P A A E R L     A A L S W G D P S T L V
UniRef90_W9G9B5                 L F V C L G N I C R S P I A E A C F K Q I L E N G G L A N W R
UniRef90_UPI000180C4DB     M Q I M Y Y C T G N Q C R S V M A E Y Y T R A K L A D R G I G N I T
UniRef90_R5MX98            S V M Y Y C V H N A G R S Q M A A A W T R A L G G     D R L E
UniRef90_C7NGS4                R V A F V C S Q N S A R S Q L A E H Y W R     H T S G R I V
UniRef90_W7SVX6                Y N V L F L C T G N S A R S I L A E S I L N A E G K     G R F K
UniRef90_UPI000368E564        M F V C T G N I C R S P Y A E R R A A Q L A P E L T V S
UniRef90_J2ITP4               K V L F V C R N N S G R S Q M A E G I L R A M Y G A H Y     E
UniRef90_UPI00047A59E2         L F L C T G N S A R S I L A E S I L N A E G K     G S F R
UniRef90_O27408            N K P K V A F I C V H N A C R S Q I A E A L G R H L A G     E
UniRef90_W8I1Q6             K I L F V C I G N T C R S V L A E H I F R N K H E Y E L
UniRef90_U5F4Y6         M A R P P E V L F V C V H N A G R S Q M A G A A L L     D R H G R G
UniRef90_F4KR55            N K P K V A F I C V H N S C R S Q M A E A L G K H F A S D
UniRef90_Q2JEA0
UniRef90_UPI0004639806
```

```
                                        50              60              70              80
UniRef90_W8WY87            V D S A A T H H F H V G E A P D A R A Q T A A R K R G Y D L S G L V A R Q V R D
UniRef90_UPI00034C2416     I R S A G S A P     A E G I D P M V D E V M A E V G I D L C T E F P K P L T D
UniRef90_UPI00041254F3     N H G A G I S S Y H E G D P M E A D A A H E L E E R G F E P G G H R A R H I D H
UniRef90_A0A031JYG1          F R G F S A G S F P K G A V N P I A L R L L E R I D Y P T E G L R S K S W E E
UniRef90_V2US51            I H A M V G     H P A D E K A I H A M Q R L T Q I D I S T H V A R Q L D S T M
UniRef90_J0SBL2            A Y S A G T E T G G L     N P Y A V R A M A E I I G I D I S G H H S K H I S T
UniRef90_UPI000462E395     V Y S A G T E N Y P E     V K P L A L E A V R E I G L D P T G Q S P K L L D A
UniRef90_T0QM65            V I A L S D E F E P P N S P A S A F G I A A M Q R R G I D L H L H R S R L V N C
UniRef90_UPI000348282B     R F K A F S A G S Q P K G V V N P L A L K V L A D S D Y P I D G L R S K S W Q E
UniRef90_B4UGE2            I S S A G S A P     S S L N P L A V R A L D E I G L D I R G Q R S K R V D D
UniRef90_F2JLJ0            S Y S A G T E L R P Q I N Q D A V R I I E     D L Y H I D M N E T Q K S K L L S
UniRef90_Q2IPR3            I S S A G S R P T Q V     N P L A V A A L A E I G L D L S G Q R S K       G L
UniRef90_A0A031JAB9        A Y S A G S     Q P K G Q V H P M A L S V L S N L G F D T A D M R S K S W D E
UniRef90_R8VZP4            V F D S F S A G T E T K P Q I N Q D A V R L M K E R Y G             V D M
UniRef90_U4TE44            V Y S A G I E K G E V D E     R T I Q A L E K F D F D A S G L R S K
UniRef90_UPI00042940FA     A E S A G L E P G T I N P L I V K V M A E V     G Y D L S Q N K T N S V F D Y F
UniRef90_B8GF35            A F S A G T T A T A V     H P L A I L V M A E I G I D I S G H R S K D L G G
UniRef90_M0FF40            V V         T G G T D P A D R V H D E V V A V M R E K D F D L A D E T P R A I E Q
UniRef90_K0V4D2              A S A F S G G S E P A D T V N A A A V A A M A E V G I D I T D E Q P R R W T D
UniRef90_K0EXY1            V R T A G S A P     A A A L N P V A V A A M A E V G I D I A G R T P K L L T M
UniRef90_A5EMZ2            A F S A G S T P K G A     V H P L A I E L L A R M D Y P T D D L R S K S W S E
UniRef90_UPI0003F711D5     V R S A G S     M P A E Q L N V N V V N S M K E L G I D L G A D F P K P L T D
UniRef90_D3NYB6            R F R G F S A G S Q P S G R I N P Y V H D L L E R L G F P T A E L R S K T W D E
UniRef90_UPI0004625B3B     S Y S A G T E T K P Q I N Q D A V R L M K Q L     Y G I D M E K T Q R S K L L S
UniRef90_L9WXV9            E I T V V T G G T Q P A E R V H E E V I D V M A E R E I D L S E R T P R E I T P
UniRef90_A0A010Q5W5        V R S A G T H A     H V G E D M E A Q M K D R L V E Y G A D T E D F E A E Q L E P
UniRef90_K1XTN1            V F S A G L E P     G K L N P D V V Q V M N E I G I D I S K N Q T K S I N D
UniRef90_I5B753            A F S A G I R T G P L D     P L A V K V M A E A G V D L S G H E T H E V K D
UniRef90_A9IET7            A Y S A G S     H P K G E V H P L A L A T L E R L H L P A T G Y R S K S W D E
UniRef90_K2PYI3            F Y S A G T E T K P K I N Q D A V R L M K K     Y Y H I D M E Q T Q Y S K V L S
UniRef90_W6X7Z6            F S S A G T H A L     V G E S A D P H V L E M A R E R G V S L G D H V A T T G H E
UniRef90_G2T713            K F R A Y S A G S P Q G I D P T V L A L L K K T N H P T E T L R S K S W D E
UniRef90_UPI000479C920     S Y S A G T     E V K K N I N P D A V R L M K I Y G I D M E L T Q R P K L L S
UniRef90_A0A059MIR2        V R S A G S A P I A A I N P V V V E A M A E L     G L D L G A E F P K P L T D
UniRef90_UPI0003B51453     V R S A G S     E P A S A V K S T I V A A L D E I G V P I G G E F P K P L T D
UniRef90_Q5YYM7            A E S A G T R A L     V G F P I E P L A A Q T L L G L G G D P E G F R A R K P E Y
UniRef90_B4R9T7            R F K A F S A G S M P T G R V N P H A L T I T R A L G F D D G D F R S K S W D E
UniRef90_UPI000476CFCD     V T S S G L E S S Q V D     P I T M Q V M S E I G I D I S L Q T S K P L S D
UniRef90_A0A021VR26        V V D S G V S G E E D G N P I D H R A Q V V L R A A G Y D V P R R R A R Q V T A
UniRef90_Q21BP5            Q F R A F S A G S Q P K G A V N P F A L K V L S S L D Y P T E G L R S K S W Q E
UniRef90_UPI00036DF5BA     G Y S A G S Q P K G E     V N P N S L V L L R E I G I A T D T L R S K S W D E
UniRef90_E2ZZ27            A F S A G V R P A G V D     P R T L S V L E H A G I P T Q G L S S K P L E T
UniRef90_UPI000363C3FE     V H S A G T H A     E R G W P V N P P M D R L L E D R G I D V S E F V A R Q A D R
UniRef90_Q0G3I6            A F S A G S S P S G A     V H P L A L E T L R E A G Y S T T G L Q P K S W V T
UniRef90_T0GQB0              F R A F S A G S Q P K G V H P A A L E L L S S V G F L T K G L R S K S W D E
UniRef90_UPI000372F933     C D S A G T S N Y H I G S P P D R R M S A A A L Q K L G I K L R G H A R Q F Q D
UniRef90_M0AGD0            S I E I R T G G T Q P A N S V H E E V V E V M Q E K D I D L R N R T P R E I I H
UniRef90_UPI000466716C     R F R A F S A G S H P K D A P N P L A L E T L K A M G Y R S E G F R S K S W
UniRef90_N6YCK8            A Y S A G S M P R G E     V H P M T L Q V L Q G Q G Y D V S A L R S K S W D E
UniRef90_U5ULF1            V Y S G G I E T H G V     N P K A I K A M K E V N I D I S H H T S D L V K Q
UniRef90_X0V1V0                S A G S M P T G K     V N P L A L S L L A K L N Y D V S E L R S K S W G E
UniRef90_D5WEQ6            A Y S A G S A P S G     R V N P F A L E A L T N A G I D T A G Y R S K S W D E
UniRef90_M5TFD1              F S A F S A G S Q P T G Q I N P F A R A Q L Q A E G M P I E G L R S K S W D E
UniRef90_UPI000465FAE7     A Y S A G S R P K G E     V N P Y T V A V L E K S G F K A D G Y R S K S W S E
UniRef90_A4T7G4            V Y S A G T A P     G A A V N A L S A E S L R E V G I D I S G E K P K Q V D P
UniRef90_UPI00035DECD1     V R S A G S A P A S D V H A N V R R L L E E M G         D A A A A D E V D D V
UniRef90_UPI00046A0E0F       A R S A G S A P A D V V H P H V R S L L A E I E G D G A A E R F P K P L T
UniRef90_UPI0004672B57     V R S A G S T P     G E G V D P T V V R L L D E I G I S V A G E Y P K P L T D
UniRef90_J3B3Y6            A F S A G L E A S E V D     P R T L E S L E H I G V D A T G L R S K S I S E
UniRef90_H0JX24            V R S A G S A P     A S S I H P V V V E A M A E I G L D L G A E Y P K P L T D
UniRef90_UPI00046980F7     V Q S V G V K N D L E I D G Y S I A V C Q E L G         V E L S R H R S R
UniRef90_D5PGE4            R V S A G T L A W P G D T A D E Q A C S V L R A Y G Y P A P A E H R
UniRef90_M3FYK8            V R S A G S L P     G D Q V N P A A V E A M K E V G V D I A G A K P K I L T T
UniRef90_UPI000378EDC9     R E I Y F A S A G I K R G E P D P F A I A A M E E I G V D M S R H K P H T F E D
UniRef90_UPI000360A443     C D S A G T A G Y H V G S P P D R R M H A A A R K R G L E M T G S A R Q V R Q D
UniRef90_UPI000371A2A9     V R S A G S A P     A R Q V D P A V A V A M W E V G I D I T G Q V P T P L R P
UniRef90_M0M4L7            V L         T G G T H P A D G V H D E V V E V M R E E G I D L S G R T P R E I T E
UniRef90_K1M2V3                    C G T S D Y H I G E L P D E R T L N C A A K N Q V P L Q H R A R Q I N R V
UniRef90_C6LIL6            V D T R G M I V L F P     E P V N P K A M E I I N Q N G L P L E E H E A V Q L T K
UniRef90_K2NW34            A Y S A G S R P R G A     V H P H A L D L L A R M N H D T A F A R S K D W A E
UniRef90_B2UH89            A Y S A G S A P S G     R I N P F A V E A L G D T T G Y R S K S W D E
UniRef90_D5W832            F H S A G I R A V N     G H G M D P V M R R L L E E R G V A A G L H H A R R L D R
UniRef90_UPI00034BECCF     V L S A G S     E P K E H I N P V A I E V M A E D G I D I A G N T P K I L T V
UniRef90_H6RPZ9            V R S A G S L P T     A Q I D D A V T E A M A E V G I D L G A E F P K P L T D
UniRef90_K9RGQ2            G L A L E R G V N N I G A I S R Y A V V A L K Q R G I T I T P E E R F P K S A I
UniRef90_R7ANH8            V A S R G M V V L     F D E P Y N P K A V A V C A A H D M I M P N N P A T Q I S A
UniRef90_Q5YR80              I D A D S A G S A P A E A L H P T V V A A M R E V G I D I S G R A P R P L T D
UniRef90_UPI0003805BA1     V L S A G S     E P A S Q L N P V A Q A M A E V G I D L T E A A P A Q L G Y
UniRef90_W9G9B5            V S S V G V R A M     V G E P I S L P M A H L L E S H G A Y S G E F A A R Q V S P
UniRef90_UPI000180C4DB     V D S A A T S R Y Q I G D S P D D R G R S C M E K H Y K H V A H H R A R Q I T K
UniRef90_R5MX98            V R S A G T L H Y P P     H P A D P M V I D L L K N D G I D A N S H S S T P L T T
UniRef90_C7NGS4            V R S S G S     Q P A D A V N P A A V E A M A E V G I D L G A V T P R V L T R
UniRef90_W7SVX6            V R S A G S R P A G D T P A I I T V A L A E L G V A M V E P Y P K P L T D
UniRef90_UPI000368E564     V L S A G T R P A P     R V H P R A V A V G R R H G L D L A H A A P K L A G D
UniRef90_J2ITP4            A Y S A G S Q P K G E     V N P Y A L K E L Q A Q G Y P S T G F R S K G W D E
UniRef90_UPI00047A59E2         S A G T D A M V G D P M Y P E M A E Q V T R R G G D P D G F I S R Q L D P
UniRef90_O27408            V H S A G S D P     K D I S P L T I Q V M E E I G V D M T G H P K S L R E
UniRef90_W8I1Q6            A Y S A G S     N P K G E V N P H A I R E L D A L G Y P S T G F S S K S W D V
UniRef90_U5F4Y6            I F E S Y S A G T H I K S N I N A D A I R L L K Q H Y Q D M E K E Q Y P K L I K
UniRef90_F4KR55            V V V E S A G S C A N Q E N V S A Y V I E I L K D K Y I S K Q K P V S V T K K K
UniRef90_Q2JEA0            F R A R S A G T A P A P A I H P G V V T V M A E V G I D L S R E S P K R L T N
UniRef90_UPI0004639806     V F E S C S A G T E L K D R I N Q D A V R L I K Q K Y D I D M E E T Q K I K L L
```

```
                              90            100           110           120
UniRef90_W8WY87        F R D A D L I L A M D W E N L S A L Q Q Q C P K V Y Q H M L L M R F S N E F E E
UniRef90_UPI00034C2416 E I V H S A D I V V T M G C G D A       C P V Y P G K R Y L D W Q
UniRef90_UPI00041254F3 V E S S D L I L V A T A V H R E Y I A E R F P E A E D R T F L V R Q F
UniRef90_A0A031JYG1    F         S Q P D A P H M D F V F T V C D A A G E T C P V W P G H P M T H
UniRef90_V2US51        L K Q A D L V L V M T M S Q Q Q H I E K T W A F S K G K V F R L G H W     Q N
UniRef90_J0SBL2        F A G E E M D V L V A V C E G G T   C P L F P W A K E T V H R     S F P D P S R
UniRef90_UPI000462E395 I P P K L D Y L I T M G C E V E               C P Y V P T T Y R E D W G
UniRef90_T0QM65        A E S A D V V Y C V T A R H E R M L R A L F P T L R A T V R         I F P
UniRef90_UPI000348282B F A D A P V M D F V F T V C D S A A G E A C P V W P G Q P M T H W G I D D P A A
UniRef90_B4UGE2        V P A G D V D T V I T L C A E E V C P V F L G R A R R I H W G L P D P A G A G S
UniRef90_F2JLJ0        D I P E V D I V I T M G C N V S         C P N L P C K H L E D W G L E D P S G
UniRef90_Q2IPR3        E E I A P D V D A V I T L C A E E V C P V W     L G K A V R L H W G L P D P A A
UniRef90_A0A031JAB9    F A       A P D A P N F D F I F T V C D N A A G E S C P V W I G H P M T H
UniRef90_R8VZP4        E Q T Q Y S K L L S D I P P V D V V I T M G C N V Q C P N   L P C K H R E D W G
UniRef90_U4TE44              H V D E F E G Q F F D Y V I T L C E K A S T E C R S Y P N T D K Q L A
UniRef90_UPI00042940FA K E G R L Y S I V K V C D L E N G Q R C P V F P L A M N V L D W T F E D P A D
UniRef90_B8GF35        F I G Q E M D V V V T V C D A A Q I C P M F P W A K E T I H     A G F S D P A A
UniRef90_M0FF40        D E I M N V D I V V T M G C S A E     G I C P M T W R G D A R D W D L
UniRef90_K0V4D2        D I V R A A D V V V T M G C G D             T C P H F P G K R Y E T
UniRef90_K0EXY1        D A V G L S D V V V T M G C G D A           C P F F P G I S Y
UniRef90_A5EMZ2        F A V A G A P V       M D F V F T V C D A A A G E A C P I W P G Q P M T H
UniRef90_UPI0003F711D5 D V V R A A D V V I T M G C G D       T C P I Y P G K R Y E D W H V E D P A D
UniRef90_D3NYB6        F A A A       D A P H M D F V F T V C D N A A G E V C P V W P G Q P M T H
UniRef90_UPI0004625B3B S I P P V D I V I T M G C N V Q         C P F L P C K H R E D W G
UniRef90_L9WXV9        E E L R D C D Y V V T M G C S A E     G V C P A T W S G E N R D W         G
UniRef90_A0A010Q5W5    D R S A D L V L T A T R E H V R D I L A D V P E S R Q K V F T L R E F V R L
UniRef90_K1XTN1        F I N E Q Y E F S Y V V T V C D E A E R C P V F P G N S K R L H W G F E D P S S
UniRef90_I5B753        F M D I D C V I T V C N T A A Q K C P S F A A E V N V I C Q S F D N P P E L T K
UniRef90_A9IET7        F         V A P D A P V F D F I F T V C D N A A G E V C P V W P G K P V S H
UniRef90_K2PYI3        D I P P V D I V I T M G C N V E         C P Y L P C K F R D D W G
UniRef90_W6X7Z6        V N S A D L I L T M T T A Q R E Y I E C V W P S S R G K V Y R L A E     N E G
UniRef90_G2T713        F A       A P G A P T L D F V F T V C D N A A G E V C P I W P G Q P M T H
UniRef90_UPI000479C920 D I P P V D V G I T M G C N V D         C P Y L P C K Q R E N W G
UniRef90_A0A059MIR2    D V V A A A D V V V T M G C G D A C         A V Y P G K R Y L D W T V P
UniRef90_UPI0003B51453 E V V R A A D V V I T M G C G D A     C P V Y P G R R Y L D W E L D D P A G
UniRef90_Q5YYM7        I D R A D L V L T M T E Q I R D Q V A E M A F G A G S R T F T L L E
UniRef90_B4R9T7        F A       A P G A P A L D F I I T V C D N A A G E V C P V W P G Q P M T H
UniRef90_UPI000476CFCD F D P A N Y D A V I S L C G         C G V N L P E A W V L R D I F E D W Q
UniRef90_A0A021VR26    V D L A S H M T A S H A R A L R R I G H D E P A L A E R V R M Y R S F D P E H E
UniRef90_Q21BP5        F A       A P D A P V M D F V F T V C D N A A G E S C P V W P G Q P M T H
UniRef90_UPI00036DF5BA F A Q A G A P A       M D F V F T V C D Q A A G E A C P L W P G H P V T H
UniRef90_E2ZZ27        F A       G E S F D Y L I D L C D K D T D E L A Q L P H S A Q T L A
UniRef90_UPI000363C3FE Q L L A G S D L T A T Q Q H L A W V T E H E P R I V R R A F T L T E F A D
UniRef90_Q0G3I6        F A       E R D A P D M H F V I T V C D N A A G E S C P V W P G T P R G H
UniRef90_T0GQB0        F         S R P D A P V F D F I F T V C D N A A G E T C P V W P G H P M T H
UniRef90_UPI000372F933 F Q D F D L I L A M D R E N Y D D I L S V D P Q Y H H K V H L M C D F C S R H T
UniRef90_M0AGD0        Y D L Q D C E Y V I T M G C S A E     G V C P A T W S G E N R D W G L A D P H G
UniRef90_UPI000466716C   D E F T Q P G A P E V D F I I T V C D S A A G E A C P I M R H W G V E D P S H
UniRef90_N6YCK8        F A       R P D A P Q M D F V F T V C D Q T A G E V C P V W L G Q P L T H
UniRef90_U5ULF1        D I         L D R A D L V V T L R S H A D Q H C P T M H P S V K K E H
UniRef90_X0V1V0        F A G A G A P K       L D F V F T V C G N A A G E V C P I W S G Q P M R H
UniRef90_D5WEQ6        F V A P Q M R V V I T V C D S A A A E E C P F W P G S P V N V H W G Y A D P S N
UniRef90_M5TFD1        F V D A A P M D L V I T V C D A A A A E A C P V V F D F I R S H W G L P D P A A
UniRef90_UPI000465FAE7 F A       E P G A P P L D F V F T V C D D A K E E C P Y W P G Q P M T H
UniRef90_A4T7G4        Q R V R Q V D M V V T L G R E A Q V E P V P G       T R F E N W D T D E
UniRef90_UPI00035DECD1 T R F Y P K P L T D D A V R A A D V V V T M G C G D V C P V L P G T R Y E D W P
UniRef90_UPI00046A0E0F D D A V R A A D V V I T M G C G D V C P I I P G V R         Y D D W A
UniRef90_UPI0004672B57 E I V Q A S D F V I T M G C G D A C       P V Y P G R R Y L D W A I E D P
UniRef90_J3B3Y6        F E G Q Q F D Y V I T L C D K S S   E E A G K M P I S D E V M T W N F E D P A S
UniRef90_H0JX24        D V V A A A D V V V T M G C G D A C         A V Y P G K R Y L D W S L L D P
UniRef90_UPI00046980F7 S F D E M E N W G D D L S S F D L V I A L S P A S Q R R A L E L T R F F H L D V
UniRef90_D5PGE4          A V P V G P E H L D A D L V V A L G R E H V A L R R G A D G D R L R C
UniRef90_M3FYK8        E A V Q A S D Y V I T M G C G D A     C P I F P G K K Y L D W A L E D P A G
UniRef90_UPI000378EDC9 L E D S N F D L I V T L S P E A H H K A E F T R A M A V D V V Y W P T P D A T V
UniRef90_UPI000360A443 F E K F D L I L A M D R E N Y R D I L R L D R D Y R D K V Q L M C G Y C S R F D
UniRef90_UPI000371A2A9 A T A A A A D V I T I I G C R S D     F P G L P A G R H E N W D L
UniRef90_M0M4L7        E E L R S C E Y V A T M G C S         T L D L D E G I D V R D
UniRef90_K1M2V3        D R E F H Y I V A M D F S N K K N I K H K F G L E H K N L F L I R E F Q P E P E
UniRef90_C6LIL6        D D F D E R M L T M E E A Q K A K I L E E Y P D T A K N V Y T L S E Y C G R T G
UniRef90_K2NW34        F A V A P E M D F V F T L C D S A A Q E P C P V W P G Q P M T H W G L P D P A E
UniRef90_B2UH89        F D G A P Q M R I V I T V C D S A A A E T C P Y W P S P V K V H W G Y P D P S N
UniRef90_D5W832        V R A A D L V L V S E R A Q V S K V E A L D P S A R G K V Y P L G K W     E A D
UniRef90_UPI00034BECCF D A V R E S D V V I T M G C G D A     C P I F P G K R Y E D W Q L D D P A G
UniRef90_H6RPZ9        D V V Q A A A D V V I T M G C G D A     C P V Y P G K R Y L D W
UniRef90_K9RGQ2        T E D F Q Q F D L V I A V D E S E H R S L M Q E R F P Q W L N N I E Y W L I H D
UniRef90_R7ANH8        D D F G N D T L V L T M S D A Q K I Y A E F D N A I N V Y T L A E Y A G R P E D
UniRef90_Q5YR80        E A V G V S D V V V T M G C G D A           C P F F P G I S Y
UniRef90_UPI0003805BA1 D T A Y D A D V I V T M G C G D S C P V F P G K R Y E D W K L D D P A G Q P
UniRef90_W9G9B5        L R D A D L V L G M T R R H R R A V L E V F P A A T R R T F T L R E F A R L A A
UniRef90_UPI000180C4DB Q D Y E E F D F I F G M D Q
UniRef90_R5MX98        D R Q A D L I L C F E R E Q I S D L L E Q N P L A I R K V F L F N D F V N A C K
UniRef90_C7NGS4        E D M E A S D V V V T M G C G D E C P       Y V P G V R R E D
UniRef90_W7SVX6        E A I H A S D V V V T G C G D A     C P V Y Q G K R Y L D W D V E D P A D
UniRef90_UPI000368E564 V L T G D E L V I A V C D R A           Y E E M D A P A H
UniRef90_J2ITP4        F A E A P E M D F I F T V C D S A A G E A C P V W I G H P M T H W G V E D P A A
UniRef90_UPI00047A59E2 V L A R Q P D L I L T A S H R R W I I E D W P E L A R R T F T L D Q F T G A A V
UniRef90_O27408        F       E G E K F D I V A S L C D E A C P V       F L G E G R Y L H
UniRef90_W8I1Q6        F A       E P G A P Q M D F I F T V C D S A A G E A C P V W I G H P M T H
UniRef90_U5F4Y6        D I P S V D I V I T M G C H V Q         C P T I S C Q Y R E D W G L L D P T N
UniRef90_F4KR55        L K D F F L I I C L D K M A F D S L N V E N N V K N K L V F
UniRef90_Q2JEA0        E M V R S I V N M G C G D A V       P S Y P D T R Y L T W         K
UniRef90_UPI0004639806 E D I P N P D V V I T M G C         N V K C P A L P C K L R E D W G
```

```
                                        130              140              150
UniRef90_W8WY87          A T V P D P Y Y G E G F N K V L D Y I E D S C Q G V L E L V R K R A
UniRef90_UPI00034C2416     I P D P A G Q S R P R R V R D E I D G R I R A
UniRef90_UPI00041254F3
UniRef90_A0A031JYG1      W G I E D P E R E R A F V T A L R Y L E H R L K L F L A
UniRef90_V2US51          K D I L D P Y Q Q D Q F D Q T C S S V Q H C L A D W H E Y L
UniRef90_J0SBL2          L T G S D G E V M D G V R R I R D E I A A W I D A
UniRef90_UPI000462E395   L D D P S G Q P I E A F R E T R D D I V S K M Y R L R D Q I L A D H
UniRef90_T0QM65          S D I A D P W H Q D A
UniRef90_UPI000348282B   V E G S D L D K E R A F V Q A F R F M K N R I G A F
UniRef90_B4UGE2          T E A       E R L Q A F R E V R D E L R R R L S A
UniRef90_F2JLJ0          K E D       E A F V L T A R I I E E K I I G L K Q R I E K
UniRef90_Q2IPR3          Q A G D E A A R L D A F R R V R D V L R T R L A A
UniRef90_A0A031JAB9      W G I E D P A Q R D A F L Q A L R Y L Q N R I A L F L A
UniRef90_R8VZP4          L D D P T G Q P D E V F L D V M E R I H E K V S M L R D H L A Q
UniRef90_U4TE44          W D I P D P K T R P G F T T T L S E L S N R L T M F L
UniRef90_UPI00042940FA   F T G T E A E M L E Q A R H L R Y K I R E N V I D L I N
UniRef90_B8GF35          V A G T S D E Q V T A F R S I R D E I
UniRef90_M0FF40            D D P D G R D L D A V R A I R D D I E G R V S A L F D E L A
UniRef90_K0V4D2          W E L A D P A G L Q A V R P I R D D I E R R V R V L L A D L
UniRef90_K0EXY1          R D W V L P D P A E Q T I D V V R T I R D R I R I L V E N L I A E L
UniRef90_A5EMZ2          W G I E D P A A A E G F T T A F R Y L N N R I G A F I Q
UniRef90_UPI0003F711D5   L D             A A G V E R V R N D L D V R V R K L A D E L L D Q
UniRef90_D3NYB6          W G F P D P S T A Q G S D A V F G Q I Q R R I Q A F L D R L A L K R K L
UniRef90_UPI0004625B3B   L D D P T G K C D D E F I T V I K Q I E N N I L L L I K R I Q
UniRef90_L9WXV9          L E D P H G T G R E T V R E I R D E I E T R V R D L F D E L E
UniRef90_A0A010Q5W5      L D S L D P G A R A G A L E T S Q T V A G K L A A L V A L V A D R
UniRef90_K1XTN1          L K G D K S E I L A H T R K I R N Q I E M K I K E F C E E I
UniRef90_I5B753          N L N N E D E K L A V Y R R V R D E I R L F V E G L P E K I T S K
UniRef90_A9IET7          W G V P D P A A V E G P E E T A M A L R R R I E L F I
UniRef90_K2PYI3          L D D P T G Q S D E V F L K T I Q D I E K K I Y E L
UniRef90_W6X7Z6          V D V V D P Y R R H A F D L A F A Q I E H G V A Y W
UniRef90_G2T713          W G V P D P A G F V G S E E V M R L L R T R I S I F L D R L S L Q R R L K
UniRef90_UPI000479C920   L D D P T G K S D E E F I S V I H T I E T K I T E L A K S L K P Y N S L R A
UniRef90_A0A059MIR2        D P D G Q S L E V V R T L R D D L D A R V R A L L A D L T
UniRef90_UPI0003B51453   L P I A           R V R E I R D E I D G R V R G L L G E L
UniRef90_Q5YYM7
UniRef90_B4R9T7          W G V P D P E I A A A F T E T A R M L G N R I R I F L N
UniRef90_UPI000476CFCD   L D D P E G E G I D K F R E V R D L V K V K V M D L I E R L A R
UniRef90_A0A021VR26      L D V D D P W Y G D G F E T T L A E V E A A A D G V V E H V R R A L R
UniRef90_Q21BP5          W G I E D P A K E A A F V T A L R Y L K N R I
UniRef90_UPI00036DF5BA   W G M P D P A R R R A F S E T W R E L C R R I E L F A
UniRef90_E2ZZ27          W S C S D P E G L E G F S H V L Q E L N D R V R L F L A
UniRef90_UPI000363C3FE
UniRef90_Q0G3I6          W G I A D P S R V E G F R A A L S H I E A R I L A F
UniRef90_T0GQB0          W G I E D P E Q A E A F R R A M H Y L L N R I S L F L A
UniRef90_UPI000372F933   K E V P D P Y Y G E G F N Q V I E L L L D A C G G L L Q Y V F D E E A I R
UniRef90_M0AGD0          K D             L E T V R E I R D E I E I R V N S L F N E I T G K Q Q
UniRef90_UPI000466716C   V E G T H E E K L R A F A Q T A T Y L K S R I M A F I N L Y R D E G G
UniRef90_N6YCK8          W G V A D P V K V E G S E Q R R R D A F S L T Q Q L L N R L R
UniRef90_U5ULF1          W G F D D P A G K D E F Q S D R D E I K A A V E D F
UniRef90_X0V1V0          W G L P D P A A A Q G S E A E R A L
UniRef90_D5WEQ6          A P G G D E G K R Q A F E L T R E A I G Y R M L Q L L A
UniRef90_M5TFD1          V A G S D A D K A A A F A L A H A I V K T R L R A L L A
UniRef90_UPI000465FAE7   W G L P D P A A V E G F A D A F R M L N N R I S I F L D K L S L Q R R L E
UniRef90_A4T7G4          P A E R G I D G I E R M R L V R D D I A T R V G R L A E Q L R T A A R L
UniRef90_UPI00035DECD1   V G D P A L A S P A G V A A I R D E L D E R V R A L L A E L L P E A
UniRef90_UPI00046A0E0F   V G D P A L A S R E G V E A I R D E I A Q R V R A L V D D L V
UniRef90_UPI0004672B57   L G L T D           D Q V R Q I R D E I Y D R V K S L L P E L V
UniRef90_J3B3Y6          S E R H E P         F R H A L Q E I H D R V K M F V
UniRef90_H0JX24          E D E S           L E A V R G I R D D I D A R V R V L L T E L
UniRef90_UPI00046980F7   E Y W P D P T G A E G R E A T L T Q F R A A R D Q I A E R L R K R F G
UniRef90_D5PGE4          V D V R N P V F G T D F E H A L V A I E A A M P G L H E W L
UniRef90_M3FYK8          K
UniRef90_UPI000378EDC9   R H G S R D A I L T A Y R E V R E R L T M R I K Q L L A
UniRef90_UPI000360A443   R D V P D P Y Y G D G F D Y V I D L L F D A C E G L L S T I T S E Q D L E A
UniRef90_UPI000371A2A9   D D P T G L G V E A I R P I R D E I R N R V E Q L L V E L R R
UniRef90_M0M4L7          W D L P D P H G A E T V R S I R D E V H E R V R S L F D E L A A D
UniRef90_K1M2V3          S E V P D P Y Y G G E F E E V Y Q I L D D S I E H F L E Y L K K G E D I
UniRef90_C6LIL6            D V E S P F G K D A Y G E C F F F L K D L I E K L A E I L K E E E E
UniRef90_K2NW34          A I G T E A E R L A F A D A Y R M L N N R L S V F L D R L A L Q R R L
UniRef90_B2UH89          A Q G G D A G K R Q A F E L T R Q A I G Y R M L Q L L
UniRef90_D5W832          S D V A D P H G G D E Y R E S L V L I E H L V M G W L Q K I
UniRef90_UPI00034BECCF   Q D
UniRef90_H6RPZ9            A V R D P A G L G E V R A I R A D I D T R V R A L L A D L V P S A T L
UniRef90_K9RGQ2          I D K T S P           E E A L G E L E K K V R D L I S Q L
UniRef90_R7ANH8          Y E V M D P K G I D E Y K K C F D G L Y E L V T G A V A K M
UniRef90_Q5YR80          R D W V L P N P C G E S I E V V R T I R D R I R I L V E N L I G E L
UniRef90_UPI0003805BA1
UniRef90_W9G9B5          A S E H D L P D A D G Q E P L A A L V S A A V Q H
UniRef90_UPI000180C4DB
UniRef90_R5MX98          H E T E D P H R Q E V F E R V Y A E I K H G V D
UniRef90_C7NGS4          W A L D D P A G Q E A V R P V R D E I R T R V E E M L R S L
UniRef90_W7SVX6          K           P L A Q I R P I R D E I D R R V R L L V E E L L
UniRef90_UPI000368E564   W S I P D P A R A D A F E T A F R D L A A R V R V L A A S I E R D
UniRef90_J2ITP4          V E G S E V D K G R A F A Q A A R F L K N R I T A F I D K L A L E T H L
UniRef90_UPI00047A59E2   R D I P D P Y R R G A A A Q C A D L I D R H L T L I L P R L V
UniRef90_O27408          A E F P D P R G A D       I D T L R R I R D E I S D W I K K
UniRef90_W8I1Q6          W G V E D P A V V E G F A Q A A R F V K N R I S A F L D K L A L E Q H L R
UniRef90_U5F4Y6          Q D D           D V F M D I I S Q I E T K V I T L A K R I S D K
UniRef90_F4KR55          W D I E D P W G K E D Y M K T F S I L E D K I S Q L N P S L K
UniRef90_Q2JEA0          L D D P A E C T L E E I R S I R D E I D A R V R A L V
UniRef90_UPI0004639806   L E D P S E K N D E E F F K I I N Q I E H N I L E L K E R L
```

```
                          1        10         20         30         40
UniRef90_A0A024GYH1                R V L F V C T H N S A R S Q L A A A L              W G Q V S D I P
UniRef90_Q8FR83                      V L F V C V H N A G R S Q I A A A L L S S Y A G        D A V E
UniRef90_X1XUI4                              N S C R S P M A E S V M R S V A N R H G L T D W Q
UniRef90_A4T7F7                    R V V F V C T Q N S A R S Q L A A A I W N R R S E L
UniRef90_E5WV3            K K R V A F I C V H N S C R S Q I A E A L G K H F A S        D V F E
UniRef90_U4UXM0        P Q S V L F C C D H N A V R S P M A E G I M K K F Y G T
UniRef90_G7Q9K3          M R V L F I C V H N S A R S Q M A E A Y L R K F C G E A            A E
UniRef90_E3I4Q1                V L F A C N Y N S I R S P M A A A L R F L A G R R          I Y
UniRef90_UPI0002F4AEFA    M K K V A F I C V H N S C R S Q M A E A L G K L F A E        E I F E
UniRef90_B9LN76                  R I A F V C V Q N A G R S Q M A A A F A R E R D R R D V G D R I E
UniRef90_C8NJ55      M S D I P K L L F V C V G N G G K S Q M A E A L A Q K          H S R G R L E
UniRef90_H0QP48                            M A E L M L S A A F A E A G L D V V I
UniRef90_G7WN27      M S R K E K V I F L S A H N S A R S Q M A E G L L R H L Y S D R Y L
UniRef90_UPI000381CBBF                        M N H L I Q Q E W K G R I L L
UniRef90_A0A058VYN3  A M T D T T Y N A L F I C T G N S A R S I L A E G I L N E L G K      G R F R
UniRef90_B6JDG1        R A P Q A V L F M C G Q N S V R S P M A A A L L R Q M A P R        G L Y
UniRef90_UPI000346EFEC            N V L I V C H A N V C R S P A A E R L F R A Q A G H A A R P R T P
UniRef90_X0U4Q0
UniRef90_D5RQU5          M T P A F N V L F L C T R N S A R S L M A E A L L N K L G G        D R F R
UniRef90_H0TDR2      R A R N P Q A V L F A C G Q N S V R S P M A E S L L Q H M F P Q A        L Y
UniRef90_D7E2J9          M K K V M F V C K K N S R R S Q M A E G F A K V L G E          G K I A
UniRef90_U5E5Q5      M A H T P S V L F V C V H N A G R S Q M A A G L L R A M A G          D R I D
UniRef90_K9D6L3                R L V F V C Q G N I C R S A F A D V V A R K A G A R
UniRef90_A3JSQ3              M N I L V L C T G N S A R S I L L E A L L G A D S R I
UniRef90_UPI0004642556    M E P C R R I L F L C T G N S A R S I L L A E A T L R A W A G        D R F E
UniRef90_X1T8D6                        G N S A R S Q M A E A F L R R Y A S K R          F D
UniRef90_UPI00031D6BA9      M F E I L T V C T G N I C R S P L A A G L L H A R L G          E F D P
UniRef90_UPI0004672A5E          V L F V C V H N A G R S Q M          A A A L L D H H A A G R V R
UniRef90_S9QY09              S V L F C C D H N S V R S P M A E A L M K R L Y G T R Y V Q S A G
UniRef90_UPI0003719997    A K Q R I L F L C N A N S A R S L M G E A L L R H L A G D R Y
UniRef90_UPI00047761E8          T N V L I L C T H N S A R S V L V E G M L N H W A A K L G K D      V R
UniRef90_Q2W1Y1                V L F C C T M N A V R S P M A E G I M K R I H G K R          V Y
UniRef90_W4HEP4          P Q S V L F A C D H N A V R S P M A E G I M K K L Y G N          D V Y
UniRef90_A0A011USG0        M L E I L T V C T G N I C R S P L A A Q L L A T R L A D L P        V R
UniRef90_W4V6W2      M S N K P K V A F I C I H N S C R S Q I A E A L G K Y F A G          D I F E
UniRef90_V9XQ42        M S T P S V L F V C K N G G K S Q M A A G L M R A A A G          D T L T
UniRef90_UPI0004648042        T K P S V L F V C V K N G G K S Q M A E A L M R A A V G          D T V E
UniRef90_Q28NB4      M Q D P Q S V L F C C D H N S T R S P M A E G L M K R F Y G H R A Y V Q S A
UniRef90_E2YUY2      M K K P K V A F V C V H N S C R S Q I A E A L G K Y L S S N          V F D
UniRef90_X2K8Y4        Q R K Y N V L F L C T H N S A R S I          L A E A A L N A L A G D R F V
UniRef90_D0CZ73          P Q S V L F C C D H N A V R S P M A E G I M K K L Y G F T Y V Q S V G
UniRef90_UPI0003119ECB          S V L F M C A H N A V R S P M A E G I A R H Y F G          A S I Y
UniRef90_UPI00047D40EF      K P S V L F V C A K N G G K S Q M A A A L M R D L A G          E D V L
UniRef90_V4NRU2              N V L F L C T H N S A R S I L A E A L L N R L G A          G R F E
UniRef90_T1BI18        M T K V L F V C L H N A G R S Q M S Q A L F E R A A G          G
UniRef90_A4EMT0            M N I L V L C T G N S A R S I L L E T I L N H R S D          G R I K
UniRef90_UPI0003180565      M K K I L F L C T G N Y Y R S R F A E H L F N C L A L K Q G L K W Q A
UniRef90_UPI00037F1C78  M P D P P E V L F V C V H N A G R S Q M          A A A L L A H R A A D R V R
UniRef90_UPI00037E4C41                    M A E G F L R D M A G          D R F E
UniRef90_A0A024GWQ0                        M A E L M L A N E L E R E G L G G V S
UniRef90_I0JVQ7      M Q K K F   I L F I C T G N I Y R S R F A Q A I F N F H A F Q H S L      C W E
UniRef90_A3TQF6              H I L V V C T G N I C R S P Y I E R V L A H E L A        G T G I S
UniRef90_UPI00045E60B2  R S A R P Q S V L F M C G Q N V V R S V M A S A L A R H L F G K        S I Y
UniRef90_A6W5A0              R V L F V C V K N G G K S Q M A A A L M R A V A G P A        V E
UniRef90_UPI0002DF6AB4          R I L H V S T G N V C R S P I T E R L T R Q A L D Q R G F G D A L
UniRef90_W6TL39                          M R H L I N E E G L D      W G
UniRef90_A9DFN6      S A P G A V L F V C G M N A I R S P M A E A I A R S L L P P
UniRef90_L9WUN5            V H V G F V C V Q N A G R S Q M A T A F A R E R D R R G W D D R L E
UniRef90_K1YP42                        M A E G L L R Y L          S A G
UniRef90_I0IRJ8            N I L V L C L G N I C R S P V V E T L L K K S L P          G E L F Q
UniRef90_S5Y9A5            S V L F C C D H N A I R S P M A E G M M K R F Y G R A Y V Q S A G
UniRef90_A0A024KHY4        V L F V C S M N S V R S P I A A A L A R K Y F P G R L I A R S A
UniRef90_W4L233      M K Q I I F V C T G N I F R S M I A E F A L R A T P G H Q L M A S S A
UniRef90_T0YGY1              V L F V C V E N A A R S L M A E A V F N A D P P D G
UniRef90_UPI00036E6A9C  K P V N I L F L C T H N S A R S V L G E V L T T T L G K G K V V G Y
UniRef90_UPI00047C2693        V L F V C V K N G G K S Q M A A A L M R K V A G          D A V T
UniRef90_UPI0003671426  K K S I L F V C D G N T F R S I S A E Y A L K K Y L A E N K I S G W K
UniRef90_V9ER77          M N I V F V C T S N T C R S P V A E H F F R R K L N M S R E Q Q I R
UniRef90_UPI0002629F88          M H N A G R S Q M A A A F L A H L A G          G S I D
UniRef90_M2XDE3            I L F V C T H N A G R S Q M A A A L M D H R A Q          G
UniRef90_A0A031GRQ0  G P F K V L F V C T A N I C R S A Y A D V T S R A          R G I Q G I E
UniRef90_B4RET1            V L F A C N L N R V R S P M A E A L L K R L L G D R V        F V D
UniRef90_X1X4V1          I V V V C V G N I C R S P T G E R L F Q          R A L P S T R
UniRef90_R6GU27        K I I I V G E N N I G R S F M A E C I L R G I L Q K R N C Q N I E
UniRef90_W8VQS2                                      K F V
UniRef90_A0A058ZLL0            M F C C D H N A V R S P M A E G L A R R F          Y G S E I F
UniRef90_L9WDR1      G K T H V A L V C V Q N A G R S Q M A T A Y A E R E R E I R G L T D D V
UniRef90_B3QA31            V L F A C G M N S V R S P M A E A M L R G I A P R T M          Y
UniRef90_Q0AQL5      M S A P S V L F V C G R N A I R S P M G E G L W R L R F G P D A I
UniRef90_UPI00047CD1B0  M S T P K L L F V C V K N G G K S Q M A A A L M R Q R V G          D A A E
UniRef90_UPI00047616DA        V L F L C T H N A G R S Q M A L G Y F L Q L A R G R A I G W
UniRef90_E6SLL6          V L V V C S G N T C R S P M A A A Y L Q Q A L A E A G A P G V R
UniRef90_L9XJR8      T K L G F V C V Q N A G R S Q M S A A F A E R E R D R R E L G          G
UniRef90_S3ZMI4          V L F V C G R N A G R S Q I A A A L L T H R A A          D L V H
UniRef90_M0EAB8              F V C V Q N A G R S Q M A T A F A E R E R D R R G L E D S V
UniRef90_I6H1P4
UniRef90_U7UFZ4      M S K P   R I A F I C I R N S C R S Q I A E A F G H T L A G D
UniRef90_U2YDX5              V C V Q N A G R S Q I A Y A F A E R E R A A R G L A D
UniRef90_G5AMW6
UniRef90_R0E879                        M G E G A L R A R L D E A R L S R I E
UniRef90_S3X6Q1            I L F A C R Q N A G R S Q L A A A L A K Q L A P          E G V T
UniRef90_UPI000255F1A0        V L F V C A K N G G K S Q M A A A L M D H H A A          G T V E
```

```
                          50              60          70              80
UniRef90_A0A024GYH1   S S S A G T R P     A E R I A Q G A I D V A R R H G V D L P E V P P R R
UniRef90_Q8FR83       V R S A G S L P S S E I P D V     V V D V L A E R G I D L A G A F P K P L T D
UniRef90_X1XUI4       V D S A A L R E W N V G R R P E D R A L A V L A E N G L S S D H V G R Q I E A T
UniRef90_A4T7F7           P A T S A G T H P A A R V H P G A V A A A Q R H K L H L R P H T P R
UniRef90_E5XWV3       S Y S A G S E T K P Q I N Q D A V R L M K E L Y G I D M E         Q S Q Y
UniRef90_U4UXM0           G T Y V Q S V G V I N D L E I D G F A I A T C E E I G V E L S R H R S R
UniRef90_G7Q9K3       V E S A G L D P T S V N P L V V A V M A E E G I D L S G K A T R R V F D L F R D
UniRef90_E3I4Q1       V R S A G V R Q G E I D     P F V I A V M D E I G I D I T H H Q P R T I E D
UniRef90_UPI0002F4AEFA A Y S A G T E T K P Q I N Q D A V R I I K         D L Y G V N M N Q T Q K
UniRef90_B9LN76       I V T G G T R P     A D H V H N V V V E A M G E L D I D L S D R T P R E V T P
UniRef90_C8NJ55       I H S A G T         N P G T Q L N A E S V A A I A E V G A D M S S G T P K A I D P
UniRef90_H0QP48       V D S A G T T A Y E V G R P I D P R A A R K L T A H N L F S D R H V A R E W Q W
UniRef90_G7WN27       A F S A G V D P R E V D         P L A V E A M A E R G I D I S R Q R S K S S K E
UniRef90_UPI000381CBBF C D S A G T S G Y H I G S P P D R R M S I A A A Q K L G I R L H G R A R Q F Q D
UniRef90_A0A058VYN3   A Y S A G S Q P K G E     V H P L A L A T L E R L H M P T T G Y R S K S W D E
UniRef90_B6JDG1       V Q S A G V R P G E S N P F A V A V M E E V G L D I S K H R P W M V D E L E D W
UniRef90_UPI000346EFEC A F H S A G I R A M E G G G M D P V M E R L L A E R G I A A G A H H A R R R L
UniRef90_X0U4Q0
UniRef90_D5RQU5       A Y S A G S         D P A P R P M P E V L E K L E S L G H D V S S V R S K S Y R E
UniRef90_H0TDR2       V R S A G V K K G E L D         P F A V S V M A E L G Q D I S G H K P T T F A E
UniRef90_D7E2J9       I F S S G L D S S E V D R I C V Q L I S E I         G I D I S N Q T S K A L S D
UniRef90_U5E5Q5       V R T A G S D P A P E         L N P A A V A V M A E I G I D I A G E R P T P L T D
UniRef90_K9D6L3         T A S F G L S T T T G R P A H D P A I A A A Q A L G H D L S A H K A R T D Y Q
UniRef90_A3JSQ3         T S F S A G S N P A G A V H P Q S L K L L S S L N Y D V S N F R S K S W D E
UniRef90_UPI0004642556 V A S A G S Q P T G     R V N P F A L Q Q L A A E G I A T A G L R S K S W D E
UniRef90_X1T8D6       I Y S A G F V P K G I N P Y I V R V M E E I         G Y D M S S H Y S K S L N Q Y L
UniRef90_UPI00031D6BA9 V V G S A G T R G L A S A E M T P E A V K I A L A L G V L P D V A A S H R S R F
UniRef90_UPI0004672A5E V R S A S A P     A D E I N P A V R A V M A E L G L D L S K E F P K P L T G
UniRef90_S9QY09       V K N D R E I D G F A V A V C H E L G V E L A R H R V R S F D Q M K G W G D D L
UniRef90_UPI0003719997   D A F S A G V E P D A P K Q A A L D A L A Q V G I D T T G L A S E P L E A
UniRef90_UPI00047761E8 A Y S A G S A P S G     R L N P F A L E A L M G A G V D V S G Y R S K S W D E
UniRef90_Q2W1Y1       V Y S V G V R R G E         P D P F V V Q V M D E I G I D V S K P R L F E E
UniRef90_W4HEP4       V Q S V G V L N D L E I D G F A I A V C A E I G V E L A R H R T R S F E E M E S
UniRef90_A0A011USG0   V S S A G A R A R D     G M P M T P E A A D L A L T R G V D P A L V A A H T P V H
UniRef90_W4V6W2       S Y S A G T E A K H K I N Q D A V R L M K E L Y N I D M E K T Q Y S K H I D E I
UniRef90_V9XQ42       V H S A G T K P     G A G I N A L A A E V L L E V G V D I T G Q T P T P V D P
UniRef90_UPI0004648042 V Y S A G T K P     G S A V N A L A A E S L L E I G V D I T G E S P Q P
UniRef90_Q28NB4       G V K G E M E I D G F A V S V C A E L G V E L E R H R V R S F D E M E Q W G D D
UniRef90_E2YUY2       S Y S A G T E T K P Q I N Q D A V R L M K E M Y         Q I D M
UniRef90_X2K8Y4       A Y S A G S         H P G T A P N P H G I E L L R S Q D I S V E G L R S K S W D E
UniRef90_D0CZ73       V V N D L D I D G F A V A V C R E I G V E L D K H R S R S F E E L E E M G E A L
UniRef90_UPI0003119ECB V A S A G V R P D E L D         P F A V A V M E E I G I D V A R H R P Q T L E D
UniRef90_UPI00047D40EF V Y S A G T K P     G K E L N P Q S V E S L R E I G V K V G G E Y P K P I A D
UniRef90_V4NRU2       A W S A G Y N P V A A     I S P Y A L A L L H K I N Y N A S R L A T K P M G K
UniRef90_T1BI18       L H E A A S A G T T P A A R L H P G V V T A M A E L G I D V S S R V P A L L T L
UniRef90_A4EMT0       A W S A G S K P     A G Q V H V Q S L R L L A D K G F P T S G L T S Q S W D D
UniRef90_UPI0003180565 V S R A     L A L E R G V N N I G A I S Q Y T I E A L K E R G V T L P E G E R L
UniRef90_UPI00037F1C78 V R S A G S A P     A D S I N P A V V E V M A E L G I D L S R E V P G K L S T
UniRef90_UPI00037E4C41 V Y S A G L K P S S V     N P L A I K A M D G V G V D I S S H T S S L N K Y
UniRef90_A0A024GWQ0   V D S A G T T G Y E A G R P I D P R A A R R L G A T Q L A W D K H I A R Q H S W
UniRef90_I0JVQ7       A F S R G I A A S K T P G L L S P F V K E T L I Q K N I P L S F A G T D P V Q L
UniRef90_A3TQF6       V S S A G T S A L     V G A P I D P E S A R R L V A V G A S D H E Y A A R Q I T R
UniRef90_UPI00045E60B2 V G S A G V I A     G D P D P F V T A V M D E I G L D V K K H R P Q S V E D
UniRef90_A6W5A0       V D S A G T R A     G T A L N A E S V Q S L R D V G V D I S G G H P Q Q L T D
UniRef90_UPI0002DF6AB4 V V E S A G T W G H E G A P M E E H A A Q V L S E Y G A D A A G F F G R L D E H
UniRef90_W6TL39       V A S A G T G D W H L N Q P A D S R S I A V A K N F G Y D I S K Q R A K H F N M
UniRef90_A9DFN6           G T Y V A S A G V R P G E R         D P F V D T V L D E I G L S L G
UniRef90_L9WUN5       I H     T G G T H P A D E V H P V V A D A M D E I D L S G R T P R E I P D
UniRef90_K1YP42       R F D A C S A G L A P Q D R I H P L A I Q V M A E I G I D L S G Q K P K S V K T
UniRef90_I0IRJ8       I R S R G L L P L D S Q P S P E D Y A K Q A K S L G V D L S D H L S N P I S A E
UniRef90_S5Y9A5       V K N D T E I D G F A I A V C Q E L G I E L A Q H R S R S F E E M Q A W G D D L
UniRef90_A0A024KHY4   G V Q S G         K A D G F V V E V M E V G V D M S V H T P H T M D E
UniRef90_W4L233       G T I A R P Q D M H P D L M A M     L A E R G M D C S M H Q Q T K L D A Q V V D S
UniRef90_T0YGY1         W R A E S A G T R P A S S P N P R T S R M L A E I G L K I P S H P P R E L T N
UniRef90_UPI00036E6A9C     S A G S T P K T S V N P I A K Q I A E E L G Y D T K K L Y S K S W D E
UniRef90_UPI00047C2693 V A S A G T K P     G T A I N Q L A S S L A E V G V D L S G E F P K S V S L
UniRef90_UPI0003671426 I S S A G I I A K Q K P M H L K T I A V L K K L G I K T I N H K P R K L T K K M
UniRef90_V9ER77       S A A L T D V F D R E G S P A S K H A V D V M K K Y Q L N L S K H R S Q L E Q M
UniRef90_UPI0002629F88 V R S A G S A P     A S S L N P A A V A A M D E V G I D M S A A G P R V L T P
UniRef90_M2XDE3       A V R V S S A G T E P G S K N A Q S V E A V A E L G A D M S G Q P S S I D P
UniRef90_A0A031GRQ0   F G S A G T R A L V E H P I D P P M A A E V H G A G D P S Q H V A R Q L T R G L
UniRef90_B4RET1       S C G L R P P G N E D D G G V D P L A A E V M R E V G L D L A E H R A K T F D D
UniRef90_X1X4V1       V A S A G L G A L K     G F P A D Q T A S D V A A E H G V S L E G H H A Q Q L T A
UniRef90_R6GU27       V V S R G L V V L     F S E P V A P G A A K I L R E K G Y R I E D F R S S Q L T D
UniRef90_W8VQS2       V D S A G T S G G H K G E A P D K R S I E V A E K N G L D I C S Q Q S R L P E D
UniRef90_A0A058ZLL0   V Q S A G V H N D L E I D G F A I A V C K E A N D R H R S R S F E E M K E W G D
UniRef90_L9WDR1       V I H S G G T     H P A D A V H D V V R E A M A D V G I D L S G R K P Q A I A T
UniRef90_B3QA31       V R S A G V K T Q E L D         P F A V A V M A E R G L D I S K H K P T T
UniRef90_Q0AQL5           A R S C G V I P A A F V D P F M V S V M L E K K V D L E D F S P A L N G V
UniRef90_UPI00047CD1B0 I R S A G T     E P G A A L N A Q S V E S L V A V G A S T E G E Y P K P I T E
UniRef90_UPI00047616DA     S G G T E P S R W L N P A V V G A M A E A G I D I T D E Y P K P W T D
UniRef90_E6SLL6       V E S A G L H A V P V P A A A E A R E A V A R D G L S L A A H R S R A L D E A T
UniRef90_L9XJR8       S I E I L T G G T H P A E S V H E E V I T V M R E R D I D L S D R T P R E V S T
UniRef90_S3ZMI4       V S S A G D A P A A V     E P F I A Q V L T E A G V D S G G G T F P Q P L T
UniRef90_M0EAB8       E I I     T G G T H P A D S V H D E V V T V M Q D H E I D L S D R V P R
UniRef90_I6H1P4           V G K G A D P C A I S V A Q A H N L S L E N H C A R Q I R M
UniRef90_U7UFZ4       V F T S C S A G T E I A T E L D R G A V R I M K N V Y G         I D M A
UniRef90_U2YDX5       E I E L V T G G T D P A D H V H E E V V A A M K N V Y G     D I A D R T P R E V T F
UniRef90_G5AMW6           P D Y R G Q S C M K K Y G I P M S H V A W Q V T E D
UniRef90_R0E879       V D S A G T G D W H V G D P P D P R A I R C A S G H G V D I S G L R A R Q V R P
UniRef90_S3X6Q1       V E S A G E P A D A V H P V V E A L A E I G L Q P D S Q P
UniRef90_UPI000255F1A0 V H S A G T K P     G E A I N T L S A E V V A E V G A D M S G G Q P K P I D A
```

```
                                              90              100             110             120
UniRef90_A0A024GYH1   L G A V A G G D F V V T V C D N A   H E E L P A L R A T   H W S V P D P L R I N T
UniRef90_Q8FR83       D V V R G A D Y V I T M G C G D       V C P I Y P G K H Y L D W D L A D P K D
UniRef90_X1XUI4       D F   H F D Y I F G M D E G N V A D L L A L   V P A G C R A K V E L L G N Y R C D
UniRef90_A4T7F7           Y L G D V L A A G D L V I A V C D S A   H E E L P I E L A R L   H W S V
UniRef90_E5XWV3       S K T F D S I   P E P D I A I S M G C D V G C P       Y I G R A F D D N W G
UniRef90_U4UXM0       S F D E M E Q W G D D L L S S F D L I V A L S P A S Q R R A L E L T R F F   H L T V
UniRef90_G7Q9K3       G R L F E Y V V T V C E E S L E G Q C P V F P G V T   H R L H L P F P
UniRef90_E3I4Q1       L E D T S F D L I V T L A P E A   H H K A E F T R T M A V D V E Y W P T I D P S A
UniRef90_UPI0002F4AEFA S K L L S D I   P E V D V V V K M G C N V V C P         F L P G K H V E D W G
UniRef90_B9LN76       D E L Q A V D L V V T M G C S A     S D V C P A T W N G E N R D W         G
UniRef90_C8NJ55       D Q L P L M D R V I I L G S D A E V       E L P A E A R G T L E R W E I D E
UniRef90_H0QP48       F T E R H L I L A L D V D H Y G W L R A S A P D S L S R I R M L R S F D P A L E
UniRef90_G7WN27       L W T A V D V V A K I R D F D S E A C P L F P S G R W R A F L P L E D P S M V E
UniRef90_UPI000381CBBF F Q D F D L I L A M D R E N Y R D I L F A D P Q Y   H H K V R L M C E F C S C H T
UniRef90_A0A058VYN3   F         V A P G A P V F D F I F T V C D N A A G E A C P F W P G K P V S H
UniRef90_B6JDG1       E G F N F D L I I T L A P E A   H H R A L E M T A T L A T D V E Y W P T Q D P V G
UniRef90_UPI000346EFEC V R D A D L V L V T E R R Q V K D V E A L E P T S R G K V Y A L G Q W E D
UniRef90_X0U4Q0       F E R F D Y V L A M D R E N L D A L A A L A P G P Q L R L L R H F D A E G G D E
UniRef90_D5RQU5       F Q D A P R M D F V I T L C D E L E G Q R C P D F G G Q A I   T A S W P L P G P G
UniRef90_H0TDR2       L E D W       E G L N F D L I I T L S P E A   H H K A L T R T V A A D V E Y
UniRef90_D7E2J9       F N           A D D F D G V I S L C G C G V N L P E A W F L R E V F A D   W Q
UniRef90_U5E5Q5       D A V G L S D V V V T M G C G E             V C P Y F P G I S Y R D
UniRef90_K9D6L3       P Q P G D L L L A M E V R Q L H R L A A D P R L S   H L P R Q L L G T W T Q P M M
UniRef90_A3JSQ3       F T G E I K M D A V I T V C S N A A N E V C P         I W P G A P I T A H W G
UniRef90_UPI0004642556 F A A A         D A A P M D L V V T V C D A A A A E A C P V F G D F L R V H
UniRef90_X1T8D6       D K I H F K I V I T V C Q K A E E M C P I I P G V E T K I Y       W P F E D P A S
UniRef90_UPI00031D6BA9 L I E A H L D S P M T R E H R R A V A E L A P T R L R S T F T I R E F A R L S A
UniRef90_UPI0004672A5E E A V Q A A D V V I T M G C P V F P G T W Y L D W Q L
UniRef90_S9QY09       A S F D L V L A L S P A S   H H R A L D L T     R H H A L T V E Y W P V L D P S G
UniRef90_UPI0003719997 Y A D Q Y F D A V I I L C E K A Q Q R C R E W Q G K T E E L L F W D I R D P R V
UniRef90_UPI00047761E8 F         V G D D A P E M R I V I T V C D S A A S E A C P H W P G S P K V H
UniRef90_Q2W1Y1       L E D D S F D V V V S L S P E A Q H K A V D T R H N A C E V F W P T F D P T L
UniRef90_W4HEP4       M G E A L S G F D L I V A M S P A A Q R H A L D L T R L F H L S V E Y W P V M D
UniRef90_A0A011USG0   V R T A D L V L A M A R D H R R E V V E L D P S R M R Q A F T A R E F A R L V A
UniRef90_W4V6W2       P P V D I V I T M G C N V E C P Y L P C K H R E D W
UniRef90_V9XQ42       D L V R D V D L V V T L G R E A   H L E P V A G           T Q F E N W D T D E
UniRef90_UPI0004648042   I D P R L V R D V D I V V T L G G E A   H V D P V P G T D F E N   W D
UniRef90_Q28NB4       L S G F D L I V A L S P A S Q R R A L E M T R T F   H I D V   E Y W P I I D P T G
UniRef90_E2YUY2       E K T Q Y S K L L S E I P Q V D I V I T M G C N V N C P T I P C   K Y R E D W G
UniRef90_X2K8Y4       F A         V D G A P R I D F I F T V C D D A A G E V C P I W P G H P A K H
UniRef90_D0CZ73       S G F D L I V S M S P A S Q R A A L E L T       R F Y H L T V E Y W P I M D P T G
UniRef90_UPI0003119ECB L E D A G F D L I V T L S P     E A   H H R A L E L T R T L A V D V E Y W P T L D
UniRef90_UPI00047D40EF D V L S Q V D A V V I L G S E A K L   E P Q P G R R C E V W E T D E P S T R G I
UniRef90_V4NRU2       H D P A F D F V I R L S P D R R G S S R T P Q F K D N P V I V D W H L P D P C D
UniRef90_T1BI18       E L A A W A E V V V T M G C G D       Q C P F I P G K R Y I D W E L A D P M G
UniRef90_A4EMT0       F A D A P A M Y A V I T V C G S A A G E T C P     Y W P G T P L R A H W G V E D P
UniRef90_UPI0003180565 P L Q A L E E D F Q T V D L I I A L D E L E   H Q P L I L E R F P K W L D A V E Y
UniRef90_UPI00037F1C78 D D V H A A D V V V T M G C G D A       C P V F P G K R Y L D W         Q
UniRef90_UPI00037E4C41 L D Q N F   H H I I T V C D H A K E S C P I F P G A R A S   H H   W G F D D P A E
UniRef90_A0A024GWQ0   F R E R D L I L A L D I D H A W L S E S A P D S R N K I R M L R S F D P R L D
UniRef90_I0JVQ7       H I R D L Q N A T L R I A L R E E E H K E P L K N L F P G W E K N C L F W H V G
UniRef90_A3TQF6       E I V A D A D L I I T   A M R D   H L S Q V V P L H P R A L R Y G F A L H D
UniRef90_UPI00045E60B2 L E E Y E G N F D L A I S L S P D A   H H A L E L T R T N A L K V E Y W P P T G
UniRef90_A6W5A0       E M V A A A D L V V V L G S E A R V E P V G G           T P V E V W E T D E
UniRef90_UPI0002DF6AB4 V I R A D L V L T A T R D   H R Q Q V I A M G H S A G L R T F T L K E F
UniRef90_W6TL39       F N E F D S I   L V M D R N N L K D V Q R L A T S E E Q R K K V K M F L T D Q N
UniRef90_A9DFN6       N R Q P Q T L D E L E D D Y F D L I V T L A P E A   H H Q A L T R S N A V D V V Y
UniRef90_L9WUN5       D E L A R C D V V A T M G C S               T L E L E A D G V D V R D
UniRef90_K1YP42       Y T I S F I I T V C T R A E E D T C P R I W P G I A D K N R L Y W P F D D P V A
UniRef90_I0IRJ8       D I W A T I I L I M D D S N R E G L R R Y G E M A L S K V V W L G A W D P S G D
UniRef90_S5Y9A5       G G F D L V V A L S P A S Q R Q A L E L T     R V F H L D V E Y W P I M D P T G
UniRef90_A0A024KHY4   L V A N R F D L V V T L S P D A D E A V R K R G L E M G A L E H W S V S D P T L
UniRef90_W4L233       A D W L V A M G L D H Q D Y I R S Q F R H A P L F N A L A Y R V E E P V L D L H
UniRef90_T0YGY1       A M M T E A A V R I T M G C L D
UniRef90_UPI00036E6A9C Y A K         P N S P K M D V V I T V C D S A A K E M C P I W P G H P V Q H
UniRef90_UPI00047C2693 E A Q K A A D V V I I L G A E A Q L E A I D G         T R Y E W W E T D D
UniRef90_UPI0003671426 L N D Y D V I I A F A E N Q V N F I N S K F G G K K V L L F K E L E K S S I W D
UniRef90_V9ER77       C M E A D Y V V C V A S G L A Y K V T E K F P K I K E R D G V L C A F         A
UniRef90_UPI0002629F88 E A V Q E S D V V I T M G C G D             T C P I F P G K R Y E D
UniRef90_M2XDE3       D L L R R A D R V V L G T E A R L D T E I P         L D G R L E T W E T D E
UniRef90_A0A031GRQ0   L E E A D L V L T M G P D H R R W I L D A W P Q H G R K V H L W A R R S A D P S
UniRef90_B4RET1       D D S F D L V I S L T P E A Q H R A V E M A R G R A S E I     E Y W P T F D P T L
UniRef90_X1X4V1       S M C R D Y D L I L V M E   K R H V E Q F C A V L G V L W C L Y L K R Y W G
UniRef90_R6GU27       E D L A S A D L V I T K G L A E E I K E S F D E A T S C M   S I G T F I D T T E
UniRef90_W8VQS2       L E K F D Y I Y V M D Q S N L E D V Q A M A D E Q R Q K I K K I L D P F P G E N
UniRef90_A0A058ZLL0   D L S S Y D L I I A L S P A S Q R L A L E L T R Y A H I D V E Y W P I L D P T G
UniRef90_L9WDR1       E T L E N C D Y V A T M G C S               T L E L E A D T D V R D
UniRef90_B3QA31           F E E L D D Y E G L N F D L I V T L S P E A   H H K A L T R A H A V D V E Y
UniRef90_Q0AQL5       G D P P A E L I V I S L S T A A D R M A R E Y A A R T G A E F Q A W P I P D P S E
UniRef90_UPI00047CD1B0 A D L R D S D L V I V L G E E A Q L P E G A A N V E R W I T D E P S L R G I E G
UniRef90_UPI00047616DA E I V R A A D I I I T L C G D     M C P Q L P D T Y Y E D W I V D D P
UniRef90_E6SLL6       A T G A D L I L A M T R A Q A E L R R R F P A V A D R V A L W R E W T P L A D
UniRef90_L9XJR8       D E L E S C D V V A T M G C S               T L E L D A E D V D V R D
UniRef90_S3ZMI4       D E V V R A A D I V V T V G C G D A C P L V P G P         R Y L D W P
UniRef90_M0EAB8       E V S T T E L E S C D V V A T M G C S T L E L D A E E I D V R D W A L
UniRef90_I6H1P4       C R E F D L I L T M E K R H I T A L C E M V P E M R G K V M L F G H W     D S E
UniRef90_U7UFZ4       A A Q G K N K T L D Q L P P L D G L I T M G C G V Q C P V H P A   K W K R N
UniRef90_U2YDX5       A E I R S A D Y V I T M G C S A E     D V C P A G W A G E N R D W D L
UniRef90_G5AMW6       F P T F D Y I L C M D E S N L R D L N R K S N Q V K N C T E L L G S Y D P Q K Q
UniRef90_R0E879       V E H F D W V L C A D S S N L R D L Q R L A P
UniRef90_S3X6Q1       K P L D P A Q V K T S D V W V T M G C G E G C P F F P G V H Y Q D W K I
UniRef90_UPI000255F1A0 D L L A R V D R V I V L G D E A K V D P V E G M A G T I E T W H T D E P S T R G
```

```
                                    130             140             150
UniRef90_A0A024GYH1  E E                 A F E Y A F N D I S R R I S D L A P R L
UniRef90_Q8FR83      E T P               E R V R A I V D E V D E R V R G L W E T I Q R
UniRef90_X1XUI4      K I I I D P Y
UniRef90_A4T7F7      A D P A R T A R A E A F D A A V G E L T E R I N H L V P N L K
UniRef90_E5XWV3      L N D P T G C P D E A F R E I I S Q I E G H I R L
UniRef90_U4UXM0      E Y W P D P T G L G E T R E T Y R Q T R D     Q I V D Q L T R R
UniRef90_G7Q9K3
UniRef90_E3I4Q1      A T G N R E Q I L E G Y R A V R D Q       L F D R I K K R F D I S G
UniRef90_UPI0002F4AEFA L E D P T G K S D E E F I K T A K V I E N K V K D L A R R I Q
UniRef90_B9LN76      L D D P H G R P I E E V R A I R D E I E G R V V A L F D E L L S E
UniRef90_C8NJ55      P S V R G I E G M D R M R L I R D D I N I R V K E L V R E L L
UniRef90_H0QP48      D G D P D P W Y G G D F E A V W D Q V Q A A V P G I V R Y V Q
UniRef90_G7WN27          D P A E R       R R V L S A A R D R L E R W I
UniRef90_UPI000381CBBF E E V P D P Y Y G E G F H Q V I D L L V D A C E G L L K Y V I
UniRef90_A0A058VYN3  W G V P D P
UniRef90_B6JDG1      T E G R R E L Q L D A Y R A T R D E L A R R I R A
UniRef90_UPI000346EFEC S D V I D P H G R D A Y R D S F A L I E H L V K G W L D K I
UniRef90_X0U4Q0      T D V P D P Y Y G G G F D R V F E I C E S G C I G L L E H I R S E H D L
UniRef90_D5RQU5      K
UniRef90_H0TDR2      W P T P D P T G T D G N R E A Y R E V       C D A L Y A R I R K R
UniRef90_D7E2J9      L D D P E G H D I D T F H R L G D E V K E R V V K L I A S L I
UniRef90_U5E5Q5      W V L A D P A G Q E V V R G M R D H L R I L I G N L I A E L V
UniRef90_K9D6L3      P H L H D P Y G L D D R Y M A Y Q R I E Q A V T A L I R
UniRef90_A3JSQ3      V D D P A A A A K S D W E P A F S L A H E R L K K R A D A L L
UniRef90_UPI0004642556 W G L P D P A A V E G D E
UniRef90_X1T8D6      F E G T E K D K L I K F R E I R D K M H E H V K S W L K E
UniRef90_UPI00031D6BA9 A I S D D
UniRef90_UPI0004672A5E       P D P A G R E K I R P I R D E I D T R V R A L L A E L L
UniRef90_S9QY09      L G E T R E E K L T Y Y R Q T R D Q I     I A R L L D R
UniRef90_UPI0003719997 I N R D N         A Y Q Q T L Q E I R T R L Q L W L D
UniRef90_UPI00047761E8 W G Y A D P S K R L A F E L T R Q A I G Y R M L Q L L A
UniRef90_Q2W1Y1      I E G S R E V R L D A Y R A V R D E L E R H I R K
UniRef90_W4HEP4      P G E D R E Q K L N A Y R Q T R D Q I H D H L K G
UniRef90_A0A011USG0  D L S D D
UniRef90_W4V6W2
UniRef90_V9XQ42      P S E R G I D G I E R M R L V R D D I A A R V T D L A D R L R R
UniRef90_UPI0004648042 T D E P S E R G I D G I E R V R D D I A A R V D D L T T R L A
UniRef90_Q28NB4      L G E T R E A K L T S Y R Q A R D Q I V D R M K A
UniRef90_E2YUY2      L N D P T G K N D D E F L K T I H S I H A K I L E L T E K I K
UniRef90_X2K8Y4      W G V P D P E K R R A F L K T F V Q L K K R I E L F L D K L D R
UniRef90_D0CZ73      L G E T R E T K L N A Y R Q T R D Q I Y D R L R N
UniRef90_UPI0003119ECB A H G A R E Q R L E A Y R G V R D       G L V E R I R Q R F T R R
UniRef90_UPI00047D40EF     E G M E R M R L V R D D I R R R V E Q L H R E L T
UniRef90_V4NRU2      V M G S S A T I A A A Y A D F D V L A G R I D V L A N
UniRef90_T1BI18      Q         P L E R V R A I R D E I
UniRef90_A4EMT0      A A A A P D D Q P A A F A E T Y A I L S A K A D A L L A
UniRef90_UPI0003180565 W L I H D I D K T S A   Q E A L D K L E K H L L L L I E K L A Q
UniRef90_UPI00037F1C78 L D D P A G L P A E Q V R P I R D D I D R R V R E L I S E I A
UniRef90_UPI00037E4C41 A E G T E P E R F T V F C R V R D E I Q Q G I Q G W L K T L
UniRef90_A0A024GWQ0  Q G I E D P W Y G G D F D V V W H Q V H N A L P G L V E Y I K
UniRef90_I0JVQ7      D I N L I P P       E R A L K M I E S A T L E I I D T L L Q
UniRef90_A3TQF6
UniRef90_UPI00045E60B2 E G G N R E Q R L E A Y R N V R D E L E R R I R A
UniRef90_A6W5A0      P S T R G I E G A E R M R L V R D D I A A R V E D L A R R L A
UniRef90_UPI0002DF6AB4
UniRef90_W6TL39        E V T D P Y F D S N F E P V F L E I E A R C K E L I E E L K
UniRef90_A9DFN6      W P T P D P T V A T G T E R I L D A Y R E V R D M L M N K I R Q R L
UniRef90_L9WUN5      W A L D D P H   G E D L E R V R S T V E D R V R A L F D E L E S Q G
UniRef90_K1YP42      A E G T D E E K Q Q V F R L V R D S L R E K I T D W L N
UniRef90_I0IRJ8      I V I P D P F R     E P P Q T Q R Q I I T R M K R
UniRef90_S5Y9A5      L A E G R E A K L Q A Y R Q T R D Q I R D R M
UniRef90_A0A024KHY4  V E G N R E A V L S A Y R T L R D T L Q K K V R E R L E P L V
UniRef90_W4L233      E A L P D W   Q E R P Q A V R D Y V R A V I T H I W E
UniRef90_T0YGY1
UniRef90_UPI00036E6A9C W G F R D P S A P D Q M R A S F D E V K E K L Q N K I E K M I K
UniRef90_UPI00047C2693 P S R R G I E G M E R M R L V R D D I D Q R V R S L F N Q L A K
UniRef90_UPI0003671426 V E D D V K D Y K T N K K A V E K K I E N T I K D I F K K I
UniRef90_V9ER77      R D L P D P W H M D T Y M E N I A Q N E E M T R D F L D K
UniRef90_UPI0002629F88 W E L D D P A G R E A V R P I R D A I R A R V E A L V V E L T R
UniRef90_M2XDE3      P S A R G I E G M E R M R L I R D D I D R A V D R L L Q E L T
UniRef90_A0A031GRQ0  D E V Q D P Y K R E A M A T A A R Q I D A A M D V I A P T L E R
UniRef90_B4RET1      A E G S R E S R L E A Y R Q V R D A L A A R I
UniRef90_X1X4V1
UniRef90_R6GU27      T E E R I P E V T E E N Q E T Y Q T C F D I L E P L M E A V A D R
UniRef90_W8VQS2      L D V P D P Y Y G G G F I N V Y K M L D Q A T D A I K E Q L
UniRef90_A0A058ZLL0  M G E S R A A K L D A Y R Q T R D Q I V E R L
UniRef90_L9WDR1      W D L P D P H G R D T V R E I R D D V N A R V E A L F D E I E
UniRef90_B3QA31      W P T Y D P T G T E G N R E A Y R E V A D S     L M Q R I Y K R F G
UniRef90_Q0AQL5      T G G N R D M K I A A Y R E T R D A I A A R V A Q W
UniRef90_UPI00047CD1B0 A Q R M D         L V R D D I A K R V D E L A T R L
UniRef90_UPI00047616DA
UniRef90_E6SLL6      P D V A D P F G Q G
UniRef90_L9XJR8      W A L D D P H G Q D T V R E I R D D V Q Q R V K A L F D E
UniRef90_S3ZMI4      L P D P E G A A V V R E I R D T I D A R I T D L L A A L
UniRef90_M0EAB8      T D   P D G Q D L E Q V R V I R N D I E Q R V T D L F D E V
UniRef90_I6H1P4      R E I P D P Y R R D A F D A V Y A L L E R S A R Q W A Q A L N T E
UniRef90_U7UFZ4      W D L V D P V G K S D Y L A V I K E R V M A L K M E M E R R G K
UniRef90_U2YDX5        E D P D G Q T P E A V A R I R D E I E A R V A D L F D E L E
UniRef90_G5AMW6      L I I E D P Y Y G S D F E L V Y Q Q C I S C C K A F L E K
UniRef90_R0E879
UniRef90_S3X6Q1      D D P S D   R S L E E V R G I I D Q I R T R V Q E L L D T V
UniRef90_UPI000255F1A0 I E         G A V R M R L V R D D I D A R V R A L L T D L T
```

```
                                    1                   10                  20                  30                  40
UniRef90_S5SW56                     M T S R P A V L F V C V G N G G K S Q M A A A L A V A E V G       D R V E
UniRef90_UPI00047CF0E5              M Q G R I H I L F L S R R N S A R S I M A Q A I L N K I G Q D R F H

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

```
                              90                  100                 110                 120
UniRef90_S5SW56        Q L L R A V D R T V L L G G D A H L T L P A D A R G T C E R W L T D E P A E R G
UniRef90_UPI00047CF0E5 F A A A E A P D L D F V F T L S D T A A G E P L P E W P I T A H W K C A D P V L

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

```
                              130              140             150
UniRef90_S5SW56       V D         G M E R M R L I R D D I H A R V R T L L A E L
UniRef90_UPI00047CF0E5  A E G E F W E K R Q A F V D V M S Q L E R R L A I F I N


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