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                                1         10          20          30          40
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UniRef90_UPI00047B13C9                                                                  I
UniRef90_D1C468                                                                         V
UniRef90_F9DVQ6          N C D F T P M K R T L T E D I R Q V I T A L Q N N V E A M N A E N F C V L
UniRef90_F7NF46            L S L N V I N W L L Q       K T M T V V L V A L P              I
UniRef90_UPI0002894D01                                                                  I I
UniRef90_S1QW24                                                                         V V
UniRef90_UPI0001850CA6                                                                  I
UniRef90_D2RIU4                                                                         V
UniRef90_F8IAF0                                                                         I
UniRef90_UPI000364F428                                                                  I
UniRef90_K9AW30                                                                       V I V
UniRef90_D5DUM3          Q P F Q L D D T I K N N V R T Y L Q Q I S T E A S N L I K H L D T S D H C I L
UniRef90_L5MMY5          M H V N C D S S L K A E L K Q E L L S I S Q A M E Q S L L A L D Q E E G C L L
UniRef90_F4A1A4            S T Q L S E W L G L N T V N W L L R N A M T V G V I A L        L I
UniRef90_Q2RGA4                                                                         V
UniRef90_R6IHG3               L N L H V I T W L L E K S M T V V M V A L P               V V
UniRef90_UPI00037939B2                                                                  V I
UniRef90_V7HYD0                                                                        C I V
UniRef90_F5L519
UniRef90_UPI0004721C4D        M S N I L N L S T V H M I L R N T A Q L G V I A L          L I
UniRef90_W9EE22                                                                        C I V
UniRef90_UPI0004005756        E F E F S S T M K E Q L K E N I I H I K G K M D D I L E S L D Q R D E C T L
UniRef90_UPI00036EE33F                                                                  I
UniRef90_F9DTZ6                                                                         I I
UniRef90_C8WTT4                                                                         V
UniRef90_V6J0L3               W F L S S L L H F R T L E W I     L N N A I T Y G L F A I   I V
UniRef90_R5YCG5                                                                         V V
UniRef90_UPI0004753C8B                                                                  V I I
UniRef90_UPI00038F608B                                                                  V L V
UniRef90_F6CJA8                                                                         I
UniRef90_W7ZNM7                                                                         I I
UniRef90_D7CJ04                                                                         V
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UniRef90_B1B857                                                                         I I
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UniRef90_UPI0004681472
UniRef90_UPI00030CF56A
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UniRef90_E6SM31                                                                         I
UniRef90_Q8Y5E4                                                                         I I
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UniRef90_C8W669                                                                         V
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UniRef90_C5R7R6
UniRef90_R7PRD7                 I H L H A V S W I M E K L M T M I L V A L P             V
UniRef90_C0D237                                                                        L V
UniRef90_UPI0004676780
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UniRef90_K9AW30         I F Q P E I R R A L E Q L G R G S L F K Y T Q T N S K E E N Q L V D H V T K A I
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UniRef90_V6Q5X4           Q P E V R R G L E H L G R G S F F R K S H T D L R K E E Y M V Q S F D K A I
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UniRef90_F9DVQ6          Q N M S K R R H G G L I V I Q R E D P L E S L V T S G I P I G A E L T H T L L E
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UniRef90_UPI000364F428   N Y L S R R K I G A L I V F E R D T G L N E Y T E S G I P V Q S L I I T S Q L L I
UniRef90_K9AW30          Q Y M A K R R I G A L I V F E K E T G L Q D Y V E T G I P M N S D I S Q E L L T
UniRef90_D5DUM3          H N L S E K R H G A L I V I E R E Q N V D P L I Q K G M P I Q A P V S A T L V E
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UniRef90_C9LKS4                                                                    V V
UniRef90_R5WDW4
UniRef90_UPI00041ED1AD               I L N K T L T I G V L A M              I I
UniRef90_R6MNF3                                                                    V I
UniRef90_W0DI51                                                                    V V
UniRef90_U2KKR4                                                                    V V
UniRef90_W1Q3U8
UniRef90_C1DWV2                                                                       V
UniRef90_T0T3J2
UniRef90_S6EUX7             F K L D M L Y F I L N K T L T I G V L S V           I I
UniRef90_UPI0003B6DB25
UniRef90_D1VZJ6                                                                    I I
UniRef90_W7YBE0     C D F S P L K L E V K N Q L L Q I N V S I D M L L T G L D H D T H C M L
UniRef90_R5Y8J4                                                                    I L V I
UniRef90_R5YFF6                                                                    I I
UniRef90_C6SPQ7
UniRef90_K1LXX1
UniRef90_B1I611                                                                       V
UniRef90_D6SL29                                                                    V I I
UniRef90_O67447                                                                    I V
UniRef90_I0GIJ6                                                                    V V
UniRef90_W7UUI4         S K A L D L K V V S Y L L Q K T L S M G V L A           I I I
UniRef90_R5D7N2                                                                    V V
UniRef90_S0EV81                                                                    V I
UniRef90_U2Q8G4                                                                    V I
UniRef90_UPI0004176DFF                                                              V V I
UniRef90_V2YAK0
UniRef90_V2Y9T9                                                                    V V
UniRef90_UPI00037D6393                                                             I V
UniRef90_M8D191
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                                50              60              70              80
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UniRef90_C4GCM8    V F Q P E L R R A L E T L G R N D F R R V L D A F R R F D D K M V S D L T K A C
UniRef90_M1KQI0    C E L D E L G H T F Q E M Q A V A S S F Y L Q S Y I E H F T P S Y T E L A R A V
UniRef90_R7A987    I F Q P E L R K A L E Q I G S Q N V L T T L K K N E D F S E K T I A E L V R A C
UniRef90_B2A4R7    V F Q P E L R R A L E Q L G R G K F F D G L F S G D E D R T Q A I K E L K K A A
UniRef90_G5K2I6    I F A P E I R A G L E K F G R S T Q V F L Q K Q T L S S E E I L V E A L I K S V
UniRef90_G2IF20    L F Q P E I R K A L E H I G R S A F S K Y I K G Y N Y V K N D F I V E I C K A C
UniRef90_I7L5X8    V F Q P E I R R G L E S L G R T T N I F S F S L S D D K K K Q S I K A Y E K S F
UniRef90_R7A091    M F Q P E L R R A L E K V G R T Q L G V R L F G L T S K W S H A I N A I C D S C
UniRef90_D1CD58    I F Q P E L R R A L E R I G T S T T F S Y S H S D E I T K L A Q N I T K A V
UniRef90_R7K1W5      F Q P E L R R A L E E L G Q K K I V S T L N Q N E R F S E R S I N E I V K A T
UniRef90_F7V7S6          Q P E L R R A L E R L G R R N P L A L L S N L D I G K N E S I N E L V R G C
UniRef90_F3ZRX0    L F Q D E I R R F L L T L G S H R N V R R L V R F F T G E H D D I L P I V M A C
UniRef90_R5KRC5    I F Q P E L R R A L E E L G K K N V L F N V F K L G N T L E K S V E E I T R A T
UniRef90_D2BNV4    I F Q P E I R R A L E S L G R T T T L F T P T R K S S P D G H I L S A Y E K S F
UniRef90_R5KAR1          P E L R R A L E Q L G K Q N F I A T L F D S S S E T K T M N E L I K A A
UniRef90_U2QKQ1    I F Q P E L R R A L E Y I G R V Q L S N I L N L N I K K E K D N I S S I V E T T
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UniRef90_R5L4F2    V F Q P E I R R L L E K V G T T A K V R I F L A Y F E E R D T A I T A I S D A C
UniRef90_R5NRY8        E L R R A L E Q L G S S T F T K M F K S L R D K T K E D I Y K V A I A T
UniRef90_R5KV41    L F Q P E I R K F L Y N L G T H H K V K S I V R L F S S G D E S I M P I V M A C
UniRef90_R6UTM6    L F Q P E I R R V L E Q M G S R R F I A F F T H A E T G N T T T I S Q T V L A C
UniRef90_UPI00037F00CC    P E I R L G L E K F G R T T Q L F A S G S S L T D E E R L I E A L V K S V
UniRef90_G1WCX2    L F Q E E I R R F L Y S L G A H R Q F K R L A K F F E E T R Q M I V P I V L A C
UniRef90_X0WFD1    I F Q P E I R R G L L K M G K R G F F L H K E V D K K V E Q L I N G L V M V M
UniRef90_R9J6V5          Q P E L R K A M E E I R K F G R T I A S L L P F D S G K S E T I N E I T K A C
UniRef90_C9LKS4    L F Q E E I R H F F S T I G S T S G S K W V T R L F K S Q K E E V Q P I V L A C
UniRef90_R5WDW4          Q P E L R N A L E Q L G R K N I L G S L T S F D N Q K E R S I Q A I I K A V
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UniRef90_W1Q3U8        E L R R A L E S I G R T V S S R S R K G L E H P T A R L I Q D L D K S I
UniRef90_C1DWV2    I F Q P E I R R G L A K L G E K G I F R F F S S     T N K K I I D D V I R A C
UniRef90_T0T3J2      Q D Q L R A A L A T V G T G R K M F S F F   D R S P V G F D V E E I R S V
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UniRef90_W7YBE0    N E F H N M R E R F V E T E S L A S T F Y L K C Y L A P Y T A K Y D E L S Q A I
UniRef90_R5Y8J4    L F H D E I R Q F L V E L G S H K R W R F L F H F F R P N R D Y I A P I V Y A C
UniRef90_R5YFF6    L F T P E I R H A L E S M G R S R F A F L N F A L Y E R K K R A V L E I C K A C
UniRef90_C6SPQ7        P E I R S G L E R F G R T P Q S F I Q R Q Q L S D D E K L V A A F V K A V
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UniRef90_B1I611    I F W P E L R L L L D K L G R G R P F S R L V A G N F P L K A L V G E I A A A V
UniRef90_D6SL29    L F Q S D I R K A L A E M G A G R L W F N P R     P T N K V L D E I I L A A
UniRef90_O67447    I F Q P E I R R T L A N I G K R T K V I K L K E Y     E E R S I D R I V R A C
UniRef90_I0GIJ6    L F Q P E I R K W F T G L G K N I K L Q E P L E G E E D Y V N E I V K G V
UniRef90_W7UUI4    L F Q P E I R R A L E K A G R S K F G I R L N E M K E K W T P A I D A I C D S C
UniRef90_R5D7N2    V F Q P E I R R A L E K L G E K S V L S S M R D R V R F S E D T I T S I V E A S
UniRef90_S0EV81    L F Y P E L R H A L E E F G P R F W S Q G L T L L R E D L S A V I D A V A M A T
UniRef90_U2Q8G4    L F Q P E I R R A L E F D D H T V Q D K E E I N K T I N E V V I A V
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UniRef90_V2Y9T9    L F Q P E I R R F L E R M G S G S L K L V F A S N K E A G Q D M E T A I T E A Y
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                              90              100             110             120
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UniRef90_R7QXQ2         Y E M G K V K T G A L I V I E N D V S L A E Y E R T G I T L D S I L T S Q L L I
UniRef90_C4GCM8         F S M G A V K T G A L I V I E G D M R L T E Y I R T G I D L D A L V T S Q L L I
UniRef90_M1KQI0         Q H L A E E K H G A L I V I E R A D P L D G M I Q K G T S L H A E I S S A L I E
UniRef90_R7A987         F E M G K V K T G A L I V I E R G T P L G E I E R T G I E V D G I V T S Q L L I
UniRef90_B2A4R7         K V L Q T R K I G A L I V I E R K T G L S D I T E T G I Q I N G K I S A E L L I
UniRef90_G5K2I6         A Y M S P R K I G A L I A I E Q T Q T L Q E Y I A T G I P L N A E I S N Q L L I
UniRef90_G2IF20         A N M S N K N V G A L I V I E R N T K L G D V I E S G T T I N S K V A S E L I E
UniRef90_I7L5X8         D Y M S E R K I G A L I V I E Q S Q T L E E Y I S T G I K L D A D I T A E L L I
UniRef90_R7A091         A E L S S T C T G A L I V I E R Q T K L G E Q I D T G T V M H A A P S K E L F G
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UniRef90_F7V7S6         F E M G K D K T G A L I V I E R S V K L N E Y V R T G I N L D A A I S S Q L L L
UniRef90_F3ZRX0         L N M S K Q K V G A L I V M E H T F P L D E I I A T G E E F N A E I N Q R L I E
UniRef90_R5KRC5         L E M A K A K T G A L M V I T Q E H D L G Q Y I E T G I R L D A K I T S Q L L I
UniRef90_D2BNV4         A Y M S E R K I G A L I A I E Q G Q N L N E F V S T G I R L D A D I T S E L L I
UniRef90_R5KAR1         F E M S K N K T G A L I V I E Q N V A L G D Y E R T G I P I D A V V S S Q L L V
UniRef90_U2QKQ1         R H M S R R R I G A L L V L E N Y T G L D E Y V E S G L I I N A A V S N E L I I
UniRef90_R6CKA3         M N M S K G K V G A L I V V E R D F P L D D V A R T G D I I D A N I N Q R L I E
UniRef90_UPI000478C17E  A S L S R Q K I G A L V V L E R E T G L N E I V E T G T S I N G L V S S G L L I
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UniRef90_H7CZ57         E D M A E T K T G A L I A I E Q G T G L A E I I S T G T Q L D A V I T S A L I E
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UniRef90_R5TL06         F E M G S V C T G A L I V V E Q A I H L T E Y E V T G I E L D C K I S S Q V L V
UniRef90_I9MB95         A V L A K N K I G A L I V L E R E T G L S D Y I E T G I K V D G L V S N E F L I
UniRef90_R5K3J9         T V L S A N R T G A L I V I E D K V A L G E Y I D T G I P V D A V V T N Q L L L
UniRef90_R6MWJ8         T K L S S T K T G A L I V L E R N M G L N D I C A S G I K I D G I V S A E F L L
UniRef90_W8TH53         F S L S R Q K I G A L I V M E R E T G L N E I I Q T G T R I D S V I T R Q L L I
UniRef90_A9B2Y9         K Q L S Q Q G I G A L M V I E R D T G L Q E Y A D R G V I V D S R I S V P L L V
UniRef90_B0PDS0         A S L S R Q K I G A L V V I E Q K T K L G D I I K T G T I I D S D P S A E L I G
UniRef90_T0UWV9         K Y M S P R K I G A L V S I E Q T Q T L Q E Q I V T G I P L D A V V T G E L L I
UniRef90_M5J877         Q Y M S K R R I G A L I T I Q I N T G L D E Y I E T G I R L D A D I S G A L L I
UniRef90_H3NGH2         T Y M S K R R I G A L I S I E M E T G L D E Y V G T G I R M N S E I S S E L V T
UniRef90_UPI000479221C  V E M A K V R T G A L I V I E Q D N S L A E Y E Q T G I D I D G I V T R Q L L I
UniRef90_W6SIQ6         E N M S N S K T G A L I V I E R N T G L K D I T E T G V K L N A D V K S A L L I
UniRef90_R5DH96         M N M A K K K I G A L I C I Q Q D V D L T V Y E H T G E M F N A D V N A R L I E
UniRef90_UPI0003B3BCF4  S F L S K R K I G G L I A I E R Q T G L S D Y I E T G T V I E A K L S S E L L K
UniRef90_E2ZBU7         A G L S K T K T G A L L V F E R E V G L N E I I D T G I Q I D G L V S K E L L G
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UniRef90_R6PRU7         D K M G A A K T G A L I L M E Q E V P L G D L E R T G I P I D A I V S S Q L L I
UniRef90_Q97EN1         K N L A E S K T G A L I I V E Q S T G L E D I I G T G T R V D A K V S A A L L E
UniRef90_S8GZB1         L S M S K G K V G A L I V I E K S M P L N D I I R T G D I I D A N V N Q R L I E
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UniRef90_UPI000380CA2A  K E M S K N K I G A L I V F A R T S S L Q D L V D A G I N I D A E I R S E L L V
UniRef90_D4JBR6         Y E M G K V K T G A L I V M E K Q V L L N E Y E R T G I P I D A Q I S S Q L L M
UniRef90_I3DW08         Q K L S E K R H G A L I V V E R T V P V A P L I N N G I P I D A K I S Q P L L E
UniRef90_R5L4F2         E R L S R T K T G A L I V I E R Q T K L Q N I I E K S T I V D A K P S P E L F C
UniRef90_R5NRY8         Q E L A K T K T G A L I V F E R D I K I Q D I I E T G V E I N S V V S P Q L L V
UniRef90_R5KV41         M N M S K G K V G A L I V I E R L T P L D D I V E T G D V I D A N I N Q R L I E
UniRef90_R6UTM6         S E M S Q S R T G A L I V F E R E I L L D D M V R S G T V L D A S V S S E L L K
UniRef90_UPI00037F00CC  A Y M S P R K I G A L I S I Q G T Q T L Q E Y I T T G I P L N A D I S S Q L L I
UniRef90_G1WCX2         M S M G K G K V G A L I I I E R A S P L D D I M D T G D R I D A N I N Q R L I E
UniRef90_X0WFD1         P M L S S K H K G A L V V L E R E V G L K D I L E T G I I L N S E F S P E L L Y
UniRef90_R9J6V5         V E M G K V K T G A L I V I E K S Q P L A E Y E R T G I D I D G V V T S Q L L E
UniRef90_C9LKS4         L N M S K Q K E G A L I V I E R H T G L K E I I R T G E L I D A D I N Q R L I E
UniRef90_R5WDW4         Y D M G K V K T G A L I V V E K T I Q C R E Y E R T G I P I D A E I S S Q L L V
UniRef90_UPI00041ED1AD  E N L A A T K T G A L I A I E Q G T G L G E I I S S G T L I D A Q V S A N L L E
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UniRef90_W0DI51         A F M S E R Q I G A L I V I E R N Q N L E P L L E G C V T I D A V V S V E L L I
UniRef90_U2KKR4         A Y M S P R K I G A L I A I E G A Q T L Q E Y I A T G I V L D A D V T S Q L L I
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UniRef90_G1WCX2        N I F F K N S P L H D G A M I I S Q K R I K A A G C I L P V S H D L N I P K E L
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UniRef90_W1Q3U8        N I F I P N T P L H D G A V I I A G H R V A A A A C Y L P L S G S Q A I P K E L
UniRef90_C1DWV2        T I F T P Q T P L H D G A V I K E G K I A Y A R A F L P L T L S S D I P Q N V
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UniRef90_W7UUI4        N I F Y P K T P L H D G A V I M R D G I I L A A S C F L P K P K D A L I N K K L
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UniRef90_F7V7S6         G T R H R A A L G I S E V S D S V T L I V S E E T G A V S V A M D G R L Y
UniRef90_F3ZRX0         G L R H R A A M G I S Q Q S D A H A I V V S E E T G D I S V A Y Q G Q F Y
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UniRef90_G9RST5          E Q L A D S R T G A L V V L E R R T N L S E I I K T G T M I N A D I T P E M L G
UniRef90_R5J1N9          I S M G K Q K V G A L I V I E H N V P L D N L V R T G E L I N A N V N Q R L I E
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UniRef90_R7D4W7          M N M S K Q K V G A L M V F E R N I P L N D I I H T G D T I D A N L N Q R L I E
UniRef90_UPI00047D317D   V E M A K V R T G A L I V I E Q T H P L T E F E R T G I D V D G I V T S Q L L I
UniRef90_K9E937          S Y M S K R R I G A L I S I E G E T A L D E Y I D T G T D V N G D I S R E L L I
UniRef90_T0N644          E Q L A E E K T G A L I V I E Q K T G L S D I I N T G T K I D A E V S S A L L Q
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UniRef90_R5J1N9         N I  F F K N S P L  H D G A M I S K K R I K A A G C I L P V S H N L D I  P K E L
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UniRef90_G8QU15         T V  F D H D T P L  H D G A M V I Q N G R I V A A G C Y L P L S E Q T D I  K K S F
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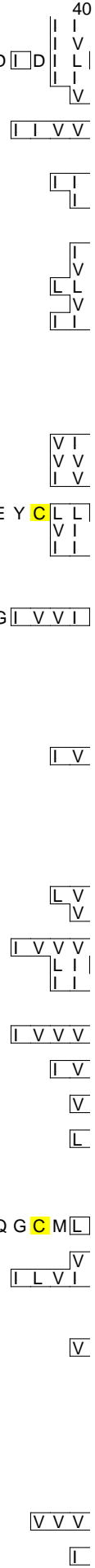UniRef90_A9KIN7
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UniRef90_F5WQZ2
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UniRef90_R5JJE1          Y D L A S R K I G A L V V L E G K T K I N E I V D T G T K I E G R V T K Q L L C
UniRef90_L8LMC1          K E L S Q N R T G A L I V L E T N S P I S R V L G T G V S L N A D V S K E L I Q
UniRef90_V4KVV4          Y Y L A K R R I G A L I V I E R E T G L K N Y V D S G F A V D G L V T K E M L V
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UniRef90_E8T1W4          A Q M S E D R I G A L I V V E R E I D L D N Y V E S G T V I D G K L T K E L L I
UniRef90_Q6AMQ7          F Y L A K R R I G A L I V I E R E N G L G E Y V E S G F I L N A K L S K E L L I
UniRef90_F5WQZ2          T V L A E R K T G A L I T L E Q G H S L A D Y I K T G T P I N S S V T S E L L C
UniRef90_R6GQ18          F L L Q Q T R T G A L I V F E R Q T K L G D I I D T G T I L R A K P S V P I I G
UniRef90_Q2JL18          R E L S Q N R T G A L I V I E P E Q P I D S F T D K G V P L Q A R V S R E I L Q
UniRef90_E7NVA5          E L L S K K R G L L I V F A R R N N L K D I I D T G I R L N A E I S S S L I V
UniRef90_M4V8Q3          I S I A Q K G Y G A L I V I E K D I L V D Y H I E I G T E L D S R I S S E I I E
UniRef90_B1CC39          S A L S K T K T G L L V V I E R Q V P L D D V V E T G V K L D S L L S T E L L N E
UniRef90_T1W6B8          K S M K K S R T G A L I V F V K Y Y D D Q L F A N S C E T I D S R I S K R L L E
UniRef90_R5BHQ5          R A M S A D K T G A L I V F P R K D S L E F I V E T G D I V D A K V T R R L I M
UniRef90_R7HHT7          D Y L R K S R I G A L I V F E R D I S L N E Y I E R S K P I Y A D I S S E L L I
UniRef90_A0A024F109      I L T A Q K G F G A L V V V E R E I V I D Y H I E F G T E M D S K V S A E L L A
UniRef90_Q1JY23          V N L A N K K I G A L I V I E R E T G L K G F L E V G V E I D A K V S S D L I C
UniRef90_UPI00029B49F2   K T M K K T R T G A L I V F V K F Y D E Q F F A N S C E V V D A K I S K R L L E
UniRef90_UPI0003627327   N K M S M S K T G A L I V F E R N N N L D F L S S S G D E M N I K V T Q P I I E
UniRef90_B7KH90          K E L S Q N R T G A L M V L E T A T T V D T F V N S G V T I N G E L S K E L I Q
UniRef90_R5J881          E Y L K K N R I G A L I V I E R D Y S L R E Y I E R A K K I Y A E I S S D L L L
UniRef90_U5DCR4          K D L S Q N R I G A L I V V E T G G A F E P F S D P G V P L N A E I S T E L L Q
UniRef90_I0IM56          Q T L S K R G M G A L I V L E R N N D L S D V V E V G T T I D A T I S Q E L L T
UniRef90_A6ENH4          H K M G K D K T G A L I V I K R N N S L D F V K D T G D A M S M E V N Q P I I E
UniRef90_D3QZ23          D D M A S T C T G A L I V L E R S T A L G E L I K N S V I I N G N I T S A T L E
UniRef90_D5MFU2          A S L A T K K I G A I I A M E R E T K L Q D Y V D S G V S L D A R V S R R L L E
UniRef90_D5XC63          A A L S E K G H G A L I V V E K N D L L D S L I G T G I I L G A K I S A P L L Q
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UniRef90_D3ENK7          R E L S Q N R T G A L I V I E T E A S I D A F V D P G V V V N G E I S K A L L Q
UniRef90_U2IRG6          M N M A R K K T G A L I A V Q G I S D L T P Y Q H A G E R F L A T V N A R L I E
UniRef90_G2PSQ1          E R M G S S K T G A L I V I E R N N S M D F V K S T G D S M N I K V T Q P I L E
UniRef90_F0RGE8          D K M G S K T G A L I V L E R T N S L D F V K S T G D K M N I E I T Q P I L E
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UniRef90_K9XPH7          K D L S Q N R T G A L I L I E T S G S L E D F V S P G V N L N A E V S K E L L Q
UniRef90_D7BGV2          E R M S A R R H G A L I A F E R R T P L G D Y A S S G E I V N A R L S A R F L E
UniRef90_D4LUU5          Y D M A E V K I G A L I V I E Q E I R L D E Y V R T G I N V D A I L T S Q L L I
UniRef90_Q39UF7          A D L S A R R H G A L I V I E R E M G V S A H L Q T G T E L D A K I T S E I L T
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UniRef90_R5I2I5          R R M G E T R T G A L I V L Q H N S S L E F V T E T G D S I D A A V N R R L I E
UniRef90_UPI00035C3AA7   K S L G A T N T G A L I V L S K S S E L K F Y V E S G D L D A V I S K E L L T
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UniRef90_S3K109          E M L S K Q K R G M L A V F T R K T S L K D I M D T G T Y L N A D L T S S L L V
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UniRef90_I3YQ22          R E M S E T K T G A L I V I G Q Q S D L R L I A E G G I A L D A K V S T P L L E
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UniRef90_R7NPZ6         N L F F N K A P L H D G A V I I S N G L V K S A G C I L P L S R N E D V D M N L
UniRef90_UPI00046CA72E  A I F L P Y S P I H D G A V V V R G R R I L W A G C L L P L T T R S D L D K D F
UniRef90_R5SHR2         N L F F K N S P L H D G A V I I D N Y H L A A R C T L P I T E R T D I P A S Y
UniRef90_UPI0003689968  S I F Q K N S P L H D G A V L I S N G R I K A A R C I I P V S E N D K I P A H M
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UniRef90_UPI000370FE42  S I F L P D S P L H D G A V V V R E N K I V A A G C I L P L A E Q V E A R R K I
UniRef90_UPI00037C3542  S I F N T R S P L H D G A V V I R K D R I V A A R V I L P L A D R R G D H I
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UniRef90_UPI00046EE41B  S I F Y K N A P L H D G A V I I V G N R V R A A R C I L P V S A K K N L R P S L
UniRef90_H5SPX0         S I F L P Y S P L H D G A V I Q K G R I T A A G C L L P L S S N P D L A P L L
UniRef90_I4BVK9         S I F W P G N P L H D G A A I L D R E R I I A A S C F L P L S D N P D I S R W L
UniRef90_G7V9E2         T I F W P G T P L H D G A V I L D R E K I I A A A C Y L P L T E N S N L S R W I
UniRef90_B9XBN2         T I F F P N N A I H D G G V I I K G D R I T Y A A C I F P L T Q R Q D L N K T L
UniRef90_F3Z3V8         T I F H P N T P L H D G A V I I Q G D K I M A A G C V L P L T T D P K L A S Q Y
UniRef90_A5G538         S I F L P Y S P I H D G A V I Q K G K L T R A G C F L P L T Q N P E I S K A L
UniRef90_Q9RYE2         A L F V R N A P L H D G G V I L Q G A R I V A A G C L F P L Q A S D G T Y R R Y
UniRef90_S7X919         S I F F K N S P L H D G A I I I D K N V V K A T R V I L P V N N E K N I P E R F
UniRef90_I2GJL4         S I F S Q Y S P L H D G A V I I S N G R I V A A G C I L P V S D D D V L P P A L
UniRef90_F5SBS4         S I F Y P G S P L H D G A V V I E G S T L V S A S N V L P L S N R Q T E E R K L
UniRef90_R7EVE9         N I F F K N S P L H D G A L I I A K G R M V S A G C I L P V S H N M N I P K Q L
UniRef90_E4TK75         S I F I P Y S P L H D G A V I V I D G K I V Y A G S I L P L T K R V D I D K K F
UniRef90_B8G342         N I F Y P N S P L H D M A V I I R G N R I V A A G C I L P L S E D I S G P R R Y
UniRef90_R5YQH4         S I F F P N N P L H D G G V I I Q G D R I S C A G A V F P T S N S S K L N K R L
UniRef90_R5JJE1         N I F I P N T P L H D G A V V V R D K K I K S A A C I L P L T Q R K D I S K E L
UniRef90_L8LMC1         T I F Q K K T L L H D G A M V I K N G R I A S A G T I L P L S G R T A P S Q Y
UniRef90_V4KVV4         S I F M P V S P L H D G G V I I S K G R I N T A G A I L P L T K S P Y L D K S Y
UniRef90_K6GRP2         T I F F P D T P L H D G A V I I Q G E T V A A A G C I L P L I A G V P L D A S L
UniRef90_K2PQZ3         S I F Y K N S T L H D G A I I I E G N R I V A T R A I L P V S N E R N I P L R F
UniRef90_Q1NUG0         S L F V P D S P L H D G A V V I K D Q R I L A A G C L L P L T K N P Y I S K H L
UniRef90_UPI000364CBFE  N I F F K N A P L H D G A M I I R D Y T I V A A A C I L P V A Q G Q D L P K E M
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UniRef90_D1Y4Y7         A I F W P N N P L H D G A T I I D T E Q I I S A G C Y L P L T E D A D L S R W L
UniRef90_R5H513         T I F H P N T P L H D G A V V I N G S R I I S A G V L L P L T E D P K L S W K Y
UniRef90_G9PU19         S I F W P G T P L H D G A V V V M D Q Q S I V A A G C Y L P L T E K T D I S R W Y
UniRef90_UPI000373FF01  S I F N K T S P L H D G A V I I A N G R I K A A R C I L P V S E N P D V P A S M
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UniRef90_R5CBY0         N I F E K N T P L H D G A V I V S G D R V V A A T C Y L P L S D N K L D K N L
UniRef90_E8T1W4         T I F W P G T P L H D G A T I V R K E R V Y K A G A F L P L T L N P K L P Q T V
UniRef90_Q6AMQ7         S I F M P V S P L H D G G V L I S K G R I E H A G C I L P L T Q N P Y I N K R Y
UniRef90_F5WQZ2         S I F V T S T P L H D G A V I I Q G D R I A C A S A Y F P P T A Q D L P T R Y
UniRef90_R6GQ18         N I F F N K A P L H D G A M V I R G S A V Y A A G C I L P L T K N E N V S P D I
UniRef90_Q2JL18         T I F Q T S T L L H D G A V V I H R N R I R A A G V I L P V S E R A A S R Q L
UniRef90_E7NVA5         T I F G H D T P L H D G A I I V Q N G I I V A A G C F L P L S E Q Q D I R K S F
UniRef90_M4V8Q3         S I F N P Q S P M H D G A I L I R G G K V V S A G C F L P L S K N P A I D K N L
UniRef90_B1CC39         N I F Q Y A T P L H D G A V I I N S E R I R A A A C L L P L S Q N K N L S T S I
UniRef90_T1W6B8         S I F Q K N S P L H D G A V I I S E N K I K S A S C I L P L T D N D T L P P Q F
UniRef90_R5BHQ5         N I F F K N S P L H D G A M I I S D D R I V A A R C T L P I T G R T D I P A H Y
UniRef90_R7HHT7         S I F F P R N P L H D G G V I I Q G N K I T S A G A V F P I S I N S K I S K K L
UniRef90_A0A024F109     S I F H P E S P M H D G A V L I R N G K I H S A G C F L P L S K N P A L D K N L
UniRef90_Q1JY23         A I F L P Y S P I H D G A L V L Q Q G R L K K A G C F L P L S Q D P D I S K N L
UniRef90_UPI00029B49F2  S I F Q K N S P L H D G A V V I S E N K I K S A S C I L P L T D N D Q L P S Q F
UniRef90_UPI0003627327  S I F F K N S P L H D G A I I I S N N I V K A T R V I L P V N N E K S I P Q R F
UniRef90_B7KH90         T I F Q P K T L L H D G A V F R S S R I V S A G V I L P L S E R T A S R Q L
UniRef90_R5J881         S I F F P N N P L H D G G V I I Q G D K I T S A G V V F P T S I D A R I A K R L
UniRef90_U5DCR4         T I F Q T T T L L H D G A V L I R G S R I A A A G V I L P I I T E K V L S R Q L
UniRef90_I0IM56         S I F L S Y S P L H D G A V I R Q N R I L A A G C F L P I S L S G D V S R H L
UniRef90_A6ENH4         S V F Y K N S P L H D G A M L I E G N K I T A T R V I L P V S S N R N I P L R F
UniRef90_D3QZ23         Q I F Y K N S P L H D G A L L I R N G R I Y A A R C H V P L A D T Y H L R K D L
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UniRef90_D5XC63         S I F Y P G N P L H D G A V I I R K G Q I V A A G C V L P L S A Q K Y T S E R H
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UniRef90_G2PSQ1         S I F F K N S P L H D G A L V I Q D N F I T A T R V I L P V S N D R N I P L R F
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UniRef90_K9XPH7         T I F Q T T T L L H D G A V L I R G S R L I A A A V I L P L S E R T A S R Q L
UniRef90_D7BGV2         S I F A P T S P L H D G G V Q V V A A G C L F P L S D R V E K Y I
UniRef90_D4LUU5         N I F E H N T P L H D G A V I I R E N R I V A A T C Y L P L S D N M E L S K D L
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UniRef90_UPI00046CA72E  G T R H R A A I G L T E E T D A V V I V V S E E R G A I S L A L N G R V T R
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UniRef90_UPI0003689968  G L R H R A A I G L T E V T D A V V L I V S E E T G S V S I A Y N G E I Y
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UniRef90_W8TCC5                                                                  T P L R E G L
UniRef90_B8I5Q6                                                                      L R E G L
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UniRef90_M1Z7T3                                                                  T E L R E G L
UniRef90_F5SI68                                                                      R E G L
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UniRef90_L1QCB4                                                                  T N L R E G L
UniRef90_E1VRU8                                                                  T E L A Q G L
UniRef90_R5XSH7                                                                  T P L R K G I
UniRef90_UPI00047BDB9D                                                           T P F R A G L
UniRef90_C6D4S0              Q L E I M N Q L L Q L V A P G T P F R D G L D N V L R A
UniRef90_UPI0004170154                                                           T P L R D G I
UniRef90_C3W9K0                                                                  T A L R E G L
UniRef90_R5LFJ2                                                                      L R A G L
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UniRef90_R7Y291                     R T D D T L R L R A T L A E I A P G   T A L R D G L
UniRef90_UPI000365A05E                                                           T Q L R E G L
UniRef90_R6UEI2                                                                  T E L R E G L
UniRef90_H0E1E1                                                                  T A L R E G I
UniRef90_UPI0001850B2E                                                           T P I R E G I
UniRef90_R5Z0R3                                                                      I R E G L
UniRef90_I9C6R1                                                                  T P L R E G L
UniRef90_C8W3V6                                                                  T S L R E G L
UniRef90_UPI000478B93C                                                           T E L R D G L
UniRef90_D1ALG7                                                                      L R D A L
UniRef90_UPI000477769B                                                           P L R D G L
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UniRef90_U5L4K9               K L G E K T R S D I L K   F L A P G T               P I R E G I
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UniRef90_Q67JP1                                                                  T A L R E G L
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UniRef90_E3DPZ7                                                                      R N G L
UniRef90_H5SN02                                                                  T P L R E A I
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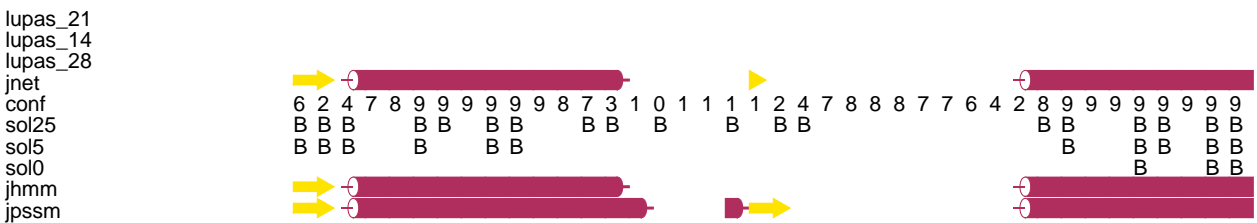
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UniRef90_M0M524
UniRef90_D2QYP4
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UniRef90_H3ZKV6
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UniRef90_UPI0003B37002
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sol25                 B           B B       B       B B       B         B B       B B           B B B B
sol5                    B           B       B       B       B         B                     B B B
sol0
jhmm
jpssm
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                                                 50            60            70          80
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UniRef90_C5CHP5                                               T Q L R F A L
UniRef90_R4W3A7         V F D E E L S R V R V D A D S T S G V Y D L F A N T R A E P D V L R S V L E L V
UniRef90_H2J5I5                                                 L R D G I
UniRef90_L0IB01             V R N A E D Q L G       L Y D L F S K S R A D A D V I K A V F E V A
UniRef90_M0CRS0        V F G E D V A R V R A D E F E K S G V Y G L F A N S R A E P S V I R D V L E V A
UniRef90_N1JMG9                                               T P L R H A L
UniRef90_Q2FNI7            E Q V S S G E E R I S T R A W R D R I L S F T D I S P E A F D A V L Q A C
UniRef90_U1QLP8        I F G E E L R S G L Y D L       F T N S R A D P N     V I R D V F D V A
UniRef90_U1PKN7        Q S F S E S R R V R T D E F T Q T G V Y D L F A N S R P D A E V V R D V F E V A
UniRef90_C9RHV3                  E H V K T I T L Y E L F E T L D E K Q K K T L K E I I K L A
UniRef90_M0M524                          G T Y D L L T N S R A D P D V I S A V V D V A
UniRef90_D2QYP4                  E H L G R L T A R D L K Q L E T S V P L E T L K T V V D L A
UniRef90_F6BCZ0                            L K S V D D I E R K T I E Q V L N I A
UniRef90_W0JH62                                 E S I R P E V F E K I L R I A
UniRef90_D4GZM5        G T F P D V R R V E E N M R S G I Y D L F A N S R A D P G     V I R D V F E V A
UniRef90_UPI0003171F4C           E H L E Q L T L Q D L R Q L N T N I P V D T L R T V I H L A
UniRef90_D8J2J4        V F G E E I R R A E E S V H S D L Y D L F V N S R A E P T   V I R S V L E V A
UniRef90_W4LMP6                                       V F E A I L N L A
UniRef90_C6WHB9                                             T D V R R G V
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UniRef90_L0DRA4              E H L E Q L S S R D L R A L E T S V P F E T L K A V V D V A
UniRef90_R7L8I7                                           K P E V I E R I L D I A
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UniRef90_G0H2V2                                   Y I S S I E K T K G K V I N E V L N L C
UniRef90_X1C778        I F Q P E L R R G L L K M G K R G F F F L H K E I D K K I E Q L I N G L V M V I
UniRef90_N0BMF9        L I D L E S Y K G L       I V S N Q K K S R V N K A I Q E C S D R I N E V L K A I
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UniRef90_Q096V7                                             S Q V V D A L I Q L A
UniRef90_UPI0003B37002                          E K S V K P E V F E K V L R I A
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UniRef90_F4HJF8                                 F F E S Y G E V I N R V L E I A
UniRef90_A7I8S2          R S G E V R I S T D T W K D Q V V A D T D V R E E V F D S V F H I C
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UniRef90_A6UQC2                       F I S G I E K T K G K V I N E V L N I C
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UniRef90_E8QZ98               E H L E R F T A R D L R A L E T T V P L E T L K A V I D V A
UniRef90_M6TEU6        L L Q P E L R K I T A D L       S K M K I F Q P F L L K Q M T D L E E I T E A V
UniRef90_E1R427
UniRef90_L0HP46                                 E R D I V E N V L K L S
UniRef90_I3REG2                          K S L I S N E I F E R Y E G I V E R V L E I A
UniRef90_C6A1S6             I R R A   E K T V K A K D E F F L Q       I E H I F R E V L E L A
UniRef90_U7DD75                               F F F N A T S S I V P D D V K E I L E R V
UniRef90_Q6ALN0
UniRef90_W8NSG0                        K S F F A Q N Q S V L Q R M L E I A
UniRef90_L0HHU5          R I S T D T W K D M V V A D T D I K E E V F D A V F H I C
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UniRef90_F8ADL8                                           A I D L A V
UniRef90_B6YV69                E L I G I K T V K K S I R G F F A Q N Q N V L Q R L L E I T
UniRef90_O28515        I F E P E K S S F L K A V E           E C V E R V H P E A F R A V L T V A
UniRef90_A7H9X0                                           S S Q V V E S L I H T A
UniRef90_B1ZQW4                                     K P E V L E R V I A V A
UniRef90_M1PVC3               R I S S T E S T L A G I I E S D K V M N S I V E I A
UniRef90_Q8TSY8                                     P E V M N A V L K I A
UniRef90_F7XPG6                        E E R A S T D V L K A V L S I A
UniRef90_E1RKS7                    G S S F I N V R S F E D I I R D V M S A V L K V A
UniRef90_J0RZP8        V F Q Y A V   L I F D L E R V R N F V D L T S Y E D I V D K D V M S V L K L A
UniRef90_D7DR02                         K Y I S S L E D I K K K V V L E S L T I C
UniRef90_Q7NDU6        I F D P E R A Q T L T Q K N P Y L S F K Y G F K P E E P R A R F R T L L L K I M
UniRef90_C6Q2Y7                          L K K A F N N D F K E S E L E E K I N S L K K I V
UniRef90_S9QLS8                            R I S M R F R E D V V T G V L R A A


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lupas_14
lupas_28
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sol5   B B B   B   B B                                     B     B B   B B
sol0                                                               B       B B
jhmm
jpssm
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Multiple sequence alignment (positions 90–120)

```
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UniRef90_A9BF43              N L G A L L F F C S Q P E L K E L I Q L G F R V D S D F L P E K I Y
UniRef90_C5CHP5        D K I V A A N T G A L I L V D D F E K Y K D L M Q V G F F L N C P F N P N K L Y
UniRef90_R4W3A7        I E L G K K G V G A L F V V G D A G K V K S H V H V G D P I                 V
UniRef90_H2J5I5        D L I I S A N L G A L I F L T D N A E E K G L I Q L G F V I D T E F E P E R M Y
UniRef90_L0IB01        I N L G K K G V G A L F V V G D A G N V K S H V H V G D P I                 V
UniRef90_M0CRS0        V E L G K K G V G A L F V V G D A G K V K S H V H V G D P I                 V V
UniRef90_N1JMG9        D D I Q D A N V G G L L F F D D Y K K Y S H L M Q I G F L L N C Q F N P N K L Y
UniRef90_Q2FNI7        I E I G R K T I G T S F L I G D S E E V L K R S R Q L I L N P F H P P E M R
UniRef90_U1QLP8        L E L G R K G V G A L F V V G D A G K V K S H V H V G D P I                 V
UniRef90_U1PKN7        I E L G R K G V G A L F V V G D A G T V K S H V D V G D P I                 V
UniRef90_C9RHV3        M E I G R E G V G T I F V I G D T L N V M N M S K P L I L N P F A G H N A
UniRef90_M0M524        V E L G Q K G V G A L F V V G D A G K V K S H V H V G D P I                 V
UniRef90_D2QYP4        V E I G R E G V G T L F V V G D T R K V L Q H C Q G Y D P V K G Y T R P E R R V
UniRef90_F6BCZ0        L E L G R R P V G T I F V I G D T L N V M N L L N P F A G H N A S I F D E K V K
UniRef90_W0JH62        L E L A N Q G V G A L F V L G D I E N I K P Y I K Q M I F N P F K D P K E R
UniRef90_D4GZM5        I E L G K K G V G A L F I V G D A G K V M N L S Y N P F E K S H V Y V G D P I V
UniRef90_UPI0003171F4C T E I G R E G V G T I L V V G D H R K V L S M S S S G Y K V E E R D L K D R K V
UniRef90_D8J2J4        I D L G K K G V G A L F V V G D A G N V K S H V H V G D P I                 V
UniRef90_W4LMP6        V E L A S Q G V G T T F V I G D H D N V M Q Y S R Q T I E E R H L L N P Q L R E
UniRef90_C6WHB9        D R V A A S G S G G L F V L G W D D T V A E V C S G G Y P L R G V T A T P E
UniRef90_H3ZKV6        I E L S G K P I G T I F V I G D T K N V I K H S H Q M V P N P F K G Y K I
UniRef90_V4EPK4        L E L A A R K V G T I F V L G D D E K V M Q L S R Q M I L N P E L E E
UniRef90_L0DRA4        V E I G R K T V G T L I V V G D V R N V D P F K G Y K R K E R N L R D P R V R E
UniRef90_R7L8I7        T E L S G K P V G C I F V I G D V E E L K P H L K G Y K P E D R N V L N P F M D
UniRef90_A6UTS6        M E L G G Q P V G A I F V V G D T E K V L T M S S Q L I L
UniRef90_UPI000379DAEA             G T I I V I G D D P R L D Q H T Q Q M I E A R N I L D P S L A E
UniRef90_G0H2V2        M E L A G T P V G S I F V I G D S D R V S Q L I L N P F E G H E S F I F D K Q V
UniRef90_X1C778        P M L S S K H K G A L V V L E R E V G L K D I L E T G I I L N S E F S P
UniRef90_N0BMF9        I N I A G R K I G T A F V I G D V K E V M K R S K Q M I I N P F E G H P V E V R
UniRef90_UPI000366B2E8 G R I A K R G E G A L F V V G D A A Y K P L V D Q S V P P F M V V D N P K L L
UniRef90_Q096V7        L Q I G Q E G I G T I I T I G D H T T V L E K S R Q M T I N P F Q G L S E A E R
UniRef90_UPI0003B37002 L E L A N Q G V G A L F V L G D K E K V L E N I K Q M I F N P F K A P D E R
UniRef90_M5U219        S Q I G R E G V G T M F V V G D T R K V L E H A D S G V D P F R G Y N K K H R
UniRef90_F4HJF8        I E L S I E G V G T I F V I G D T K E V M K H S H Q L V P N P F K G H H L
UniRef90_A7I8S2        T E I S G K P V G T T F L I G D T K N V L N A F E G H V P M R M V T N P D L K E
UniRef90_C5A5U8        I E L S G H P I G T I F V I G D V K N V M K H S H S G H K I N V L D R K S K E I
UniRef90_A6UQC2        M E L A G T P V G T I F I I G D S E K V L K M S S Q L I L
UniRef90_UPI00029A97E2 E I A A E G R V G A M F V V G D A R N L N P F H G Y S R Q L R N V L D P S L T E
UniRef90_E8QZ98        V E I G R K E V G T L I V V G D A R N V L D P F K G Y R R K D R N L R D P K V R
UniRef90_M6TEU6        K I M A K N K T G S L I A I V R E N S L K E I I D Q A V Q L D A I I S T N L L L
UniRef90_E1R427                    V G T L F V V G D Q A G V Y P Y T R Q M I V S D K N I L D P S I E
UniRef90_L0HP46        M Q I V K K G R G A L F I I G D T N N V M R Y V N P M S G I D K N L R N L L N E
UniRef90_I3REG2        I E L S G K P V G T I F V I G D T K E V M K H S H Q I V P N P F K A H N L
UniRef90_C6A1S6        I E L S G K P V G T I F V I G D T R N V I R H S Y Q G Y K I N I L D R S T R E I
UniRef90_U7DD75        L G L A K H P V G T I F V V G D T N R V N T Y V T Q L I I N P F R G L S E S E R
UniRef90_Q6ALN0             N L S T N K I G A T I I Y W L K D D F T S Y A T L P D S I S L D F N N E N H Q
UniRef90_W8NSG0        I E L S G T P V G T I F V I G D T R R V L K H S H Q L I P N P F K G H R I
UniRef90_L0HHU5        T E I T G K P V G T T F L I G R Q I I L N P F E G H K P E L R M V T N P L N E
UniRef90_F8AJ39        I E L S G R P V G T I F V V G D T K N V L K H S H Q L V P N P F K G H N L
UniRef90_UPI00037AEB30            I G A M F I L G D H Q E L N P F Y G Y A E E D R N I L N P F M D E
UniRef90_Q1AX59        V E I A R R K I G T L F V V G D A E E V M R R S K P G H P A E S K R D P N L R E
UniRef90_F8ADL8        E G R E G K P I G T T F I I G D S E K V L E Y C E Q L I K E R N I L D P H L E E
UniRef90_B6YV69        I E L S G T P V G T I F I I G D T R N V L K H S H Q G H K I N V L D R D S K E I
UniRef90_O28515        L N I A Q R K I G T A F V M G D V E E V M S R Y H G H K E A D R D I N P E N W E
UniRef90_A7H9X0        M E I G A E G V G T I L V I G D S T A V M E I I L N P F Q G I R N A L D P P I R E
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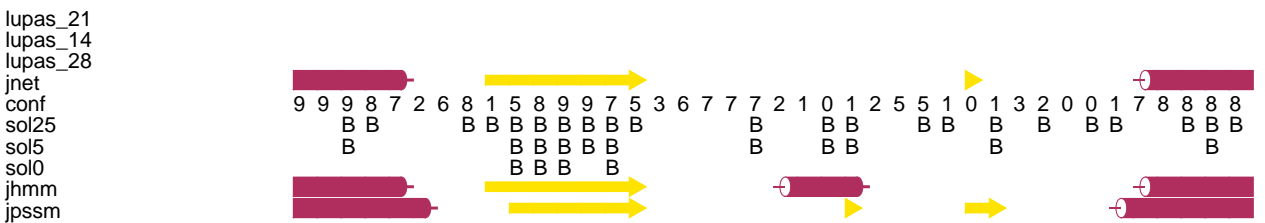
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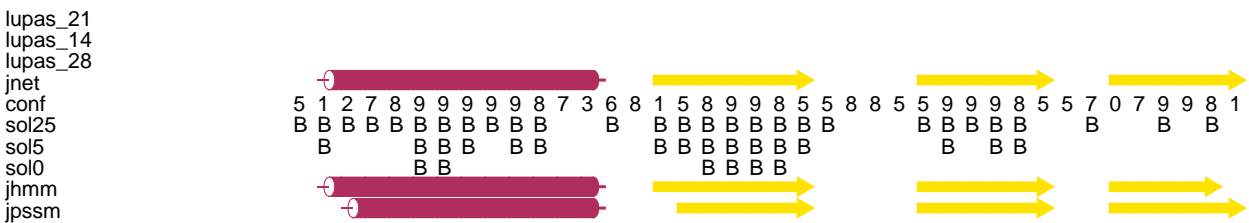
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