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

QUERY	90	100
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UniRef90_C5JVT2	I K Q L L M A A V D V D N S G T	D Y [E F I A
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 V P E S E I R M L L E A A D G N G T L D C D E F V T V L H L K K M S N D
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 L F D K D G D G T I N S H E L G T V M R S L G Q N P A
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 F G K D R E L G P E E L D
 N P S E A E V T Q L I R E V D I D G S V E F S E F I A M F E R H R N T E E
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 R Q E Q V A
 E I R

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 S I S K S Q M K

A F K G L N D A D V T A A L D G C K S A F D H K A F F K A C G L A A K S A D
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 H G L T T Q K K Q

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M S N H E K K
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 D S F N Y K A F F A K V G L A S K S A E

S M E

F I A S Q L N E Q E I A
 N L S E D E I A G L M I D S D N S G Q I T Y E E L K V G L K K L Q E S E
 D A N G K G K L D Y G E F V A V S L Q R M D N D E
 E S E V D T I L A D F D R N G Y I D Y S E F V T V A M D R K S S K D
 T Q E T L D

F I G S K L T T L E E R K
 G A R A E E I A I M L T E V D G D G R I S V E A I M N R V G T G S D P E E
 N P S E E D L R T M V R D A D G D G F V D F D E F V I H L N T E I A A S V E

50 60 70 80

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UniRef90_C5YHJ6	E L A S A F R Y F D K D G S G F I E P E E L R E G V D Q L R T V M I A L K L K P T D E E E
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UniRef90_A0A022QB08	E L K E A F K V F D K D Q N G Y I S A N E L R Q T M I N L G E K L T V E E
UniRef90_UPI0003C869E4	E L Q A A F E E F D T D H D G Y I G Y R E L G E C M R T L G Y M P T E M E
UniRef90_K1PFG9	E I I D A F T V F D K E G N G Y I S A A E L R H V M T N L G E K L R D E E E
UniRef90_UPI0002C551F0	A I R Q A F Q T L D K D R S G F I E W N E I K Y I L S T I P S S G P P L T D E E E
UniRef90_Q5BKL4	Q V R K V F E I L D R D K S G F I E E D E L Q L F L Q N F K S N A R A L S A A E E
UniRef90_A0A023B9C5	E L I E A F Q V F D R E G N G L I T A Q E L R H V L T Q L G E K L S P E E E
UniRef90_B4NJC0	E F K E A F A L F D K D G S G S I T T R E L L G T L M R S L G Q N P T E A E K
UniRef90_K4C7G7	N L L A A F S Y F D K D G S G Y I T T D E L L Q Q A C V E F G I L G D V K
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UniRef90_U6JKA7	E M L E A F R V F D H N N D A Y I D H E E I K R T M H F L G E T V S D D D
UniRef90_F6HYQ9	G I R Q I F H M M D T D K N G N L I S F E E L K D G L H K G H P V A D P D
UniRef90_X8JCUS	E L L D R I M N E V D L D H S G T I D F N E L F L A M M S K M G S N T I D D E E
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UniRef90_L2G7Q7	E L K N A F K V F D R D G S G T I S A E E L R H V L K S L G E N M T N A E
UniRef90_M0RCJ6	E I L R E A F R V F D K D G Y T S A E E F R H V M T T L G E K L T D E E E
UniRef90_P25071	E Y R E S F R L F D K N G D G S I T K K E L R T V M F S L G K N R T K A D
UniRef90_A0A016TEN0	M I R E A F R V F D K D G N G V I T A Q E F R Y F M V H M G M Q F S E E E
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UniRef90_Q948R0	E F R E T F A F F D K D G D G C I T L E E L D T V V R S L G Q T P T R E E E
UniRef90_R0GP12	E L E A V F K K F D V N G D G K I S S K E L L G A I M K S L L G H E V P E E E
UniRef90_A9US90	E I R E A F E L F D T D G S G T I D A K E L K V A M R A L G F E P K K
UniRef90_C5XN41	E L R E A F R V F D K D Q D G F I S A A E L R H V M T N L G E K L S N E E E
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UniRef90_F2TWF8	E I L K A K F K L F D D D S T G K I S F K N L K R V A Q E L G E S L S D E E E
UniRef90_B9QDJ3	E I L K A K F R L F D D D E T G K I S F K N L K R V S K E L G E N L T D E E E
UniRef90_D2VGX1	E Y K E A F S L F D S D S D G T I V T K E L L G T V M R A L G L N P S Q G E E
UniRef90_E2RHU8	E M R E V F R A F D L N G D G H I S V D E L K Q A M A K L G E L L S Q E E E
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UniRef90UPI000258E30D	E F R E A F R L F D K D G D G S I T K E E L G R V M R S L G Q Q L N P R E E
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UniRef90_C1BR93	E Y R E V F S F F D R D G G G T I T S V E L L G Q V M R T F G W N P T E G D
UniRef90_M0TLB3	E L R E A F A V F D F D A D G D G K I S A E E L L L G V F A T L G D C G C T L E D
UniRef90_B4FY36	E L S K A F R I I D Q D G N G F I S N I D I Q R L A K E L G V N L T L D E E E
UniRef90_Q9JM83	E L R A V F N V L D Q N G D G Y I T V D E L L K E S L S K L G E S L S Q E E E
UniRef90_I1IGP7	E L R E A F G V F D R N Q D G L I S R E E L R H V M V S L G E K M S E E E E
UniRef90_R0HE42	E L Q D L V N E M D A D G N G T I D F D L E F L C A M I D T D S K E K F I K A L E E
UniRef90_U6HXF5	E A K E I F S N L D K N H D G R I D F R E F F V S L M Q P L L D E S K S G D F Y E
UniRef90_J9I4G4	H L K T A F T Y F D K D G S G S I S I D E L L K Q C L Q N F E D F T L P E E T E
UniRef90_K3YMU1	K Y V Q M F R L M D K D H N G N I S L E E L M E G L H I N G Q P V P E P E E
UniRef90_V4L8Q0	E I K E L F T G L D V D Q N G F I T A A E F Q Y V M K N L S G S K L T D K E E
UniRef90UPI0002C2EF5D	E L L Q A F S Y F D K N N S N Y I E F D E L L K E A L L D D Q L G P A N E Q V E E
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UniRef90_Q9M7R0	E L K E A F E L Y D Q D H N G L I S S V E L H K I L T R L L G E R Y A E H D
UniRef90_V7B0V9	E I K S A F Q V F D L N G D G K I S A E E L S H V L K S L L G E S C S L N A E E
UniRef90_I1HP73	Q L A E A F R A F D R D G N G Y I S A A E L A R S M A Q M G H P I C Y A E E
UniRef90_A0C9G2	K I Q T Q F K K I D V N K D G T I S R E E L L K C Y R E I Y E D E V K C Q E I E
UniRef90_Q9LX27	D L K R V F Q M F D K N G D G I T K E E L N D S L E N L G I F M P D K D
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UniRef90_Q22W39	E L L K V F Q S L D T N N D G K I Q G Y K K I F N H P N P Q E E E
UniRef90_A2DG97	E I I R E A F D L F D T D G S G S I D A K E L L K V A M K A L G F E P T K E E E
UniRef90_J0DZZ5	D L R G O F K E F D L N G D G Y I S Q D E L N A V M V K M G Q C P T D D E E
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UniRef90_B5E054	E I R E A F Q V F D R E N K G C I T C K E L G T V M R S L G Q N P T E A E E
UniRef90_D8LG93	E N L E K D F A K M D K D G S G T I S L E E F D N V L S S Q A N S K A D
UniRef90UPI0003EAAE8E	E L R D A F G V F D R D G D G Y I V S A G E L R A V L R R L G M E E G A R H G D
UniRef90_H2ZW00	E I K E A F D L F D T D G S G T I D V K E R L G N C M R T M G Y M P T E M E E
UniRef90UPI000329E159	E L R D A F K E F D T N G D G E I S T G E L R E A M R K L L G Q Q V G H R D
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UniRef90_Q9C8Y1	D I K K V F Q R F D K N N D G K I S I D E L K D V I G A L S P N A S Q E E E
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UniRef90_Q5CJK3	K L E S A F Q K F D Q D G N G K I S V D E L L R A S V F G L D H L E S K T
UniRef90_J3JWQ0	E I R D V F Q L F D K D G D G T I S T K E L L G V V M K A L G Q N P T E A E E
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UniRef90UPI00032AB5CE	E L R E A F E V F D T D R D G R I S A A E L L R V F K A I G D E R C T L E E E
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UniRef90_C5YHJ6	I L D I I R D [V] D T D Q D G R	S Y Q E F E L M M K A
UniRef90_B4LDN2	L D E L I R E G D I D G D G Y	L N Y E E F F V Q L M
UniRef90_UPI000440A435	L R A A F E [V] F D K D G S G T	S A A E L K Q V M Q S
UniRef90_A0A022QB08	V E Q M V R E A D [L] D G D G Q	S F D E F F V K T M
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UniRef90_K1PFG9	I D E M V R A A D M N G D G Q	N Y K E F F A H V L L A
UniRef90_UPI0002C551F0	A E A M I Q A A D T D G D G R	D F E
UniRef90_Q5BKL4	T K A F L K A G D S D G D G K	G V D E F F Q A L V K A
UniRef90_A0A023B9C5	A D [L] M I S E A D [V] D G D G Q	N Y E E F F V K M M M A
UniRef90_B4NJC0	L Q D L V N E [V] D V D G N G E	D F N E E F F C G M M
UniRef90_K4C7G7	L D D I I K E I D I D N D G R	D Y G E F F A T M M K
UniRef90_UPI00032AD711	L K A L I I A R V D Q D G D G A	S F Q E F F L A E M
UniRef90_Q1W3B0	L Q D M I N E V D S D G N G T	E F F A E F F L N L M
UniRef90_UPI0002C330ED	V P K I F K L V D [L] D G D G F	N F K E F F M E V H K
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UniRef90_A0A023B173	V D N I L A S V D F D K N G Y	E Y S E F F V T V
UniRef90_UPI0002B49EED	I I R D M I S E V D V D N N G T	D F D E F F L N V M
UniRef90_V4U4X4	V Q E M I S E V D F D G N G S	D F [L] E F F L T I M
UniRef90_U6JKA7	V R A M I K E A A D A D H D G [L]	V D F E E F F K R M M E
UniRef90_F6HYQ9	V K M L I E A A D M D G T G T	L N C D E F F V T I
UniRef90_X8JCUS	L D E A F K V F D R D G S G Q	S E E E E L K A V M N S
UniRef90_U6GUG5	A A A E L H E A D A D G D G K	N F E E F F C G L M R
UniRef90_L2G7Q7	I D E M I Q M A D K N G D G T	D Y D E F F A S I M M
UniRef90_M0RCJ6	V D G M I R E A D M D G D G Q	V I Y E E F F V Q M V T A
UniRef90_P25071	L Q D M M N E V D [L] D G D G T	D F P E F F L Y L M
UniRef90_A0A016TEN0	V D E M I R E V D V D G D G E	D Y E E F F V K M M
UniRef90_W5F5E9	I E D I I F D V D I D K D G K	S Y E E F F E L M M K A
UniRef90_W7X3W9	V N K I F D Q I D V N N Q S G F	D Y T E F F I I T A V
UniRef90_UPI0002C33919	L Q D D L V G E L D R D G S S T	V G F P E F L L G L I
UniRef90_Q948R0	L A E M I R D V D V D G N G T	E F F A E F F L A L M
UniRef90_R0GP12	L E K A I T E I I D R K G D G Y	N F E E F F V E L
UniRef90_A9US90	I K K M I Q D V D K D G S G S	D Y N E E F F L I M M T
UniRef90_C5XN41	V G E M I R E A A D A D G D G D	N Y A E F F V K V M M A
UniRef90_F7CKL6	I S Q K I S G G K V D F E D F V E L M	
UniRef90_UP10003EA934E	I D E I L R D V D L N G D G [L]	V D F E E F F V R M M
UniRef90_UP10002B450AE	V F H M S E A D L N G D G H V	D Y H E F F V K I M T
UniRef90_A4VQ6	T E A I I K T V D T D R D G K L	N Y E E F F L T L L R
UniRef90_A0A022S192	A E Q M I N E V D L D G D G L V	S Y D D F F V K M M M A
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UniRef90_F2TWF8	L Q E M I D E A D R D G D G E	I N Q E E E F F L R I M K
UniRef90_B9QDJ3	L L Q E M I D E A D R D G D G E	I N E E E F F I I R I M R
UniRef90_D2VGX1	L L D D M I K Q V D S N N N G T	D F K E E F F L V L M Q
UniRef90_E2RHU8	L L D T M I Q E A D V D K D G Q	V N Y E E E F F M R I L
UniRef90_B9SJ25	V M K M I K E F D A D G D G F	I D F K E E F F V E L
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UniRef90_C1BR93	L Q E M I N E I D Q D G N G C	S F N E E F F I Y L M T
UniRef90_M0TLB3	C R R M I G G V D A D G D G F	V G F E D F F V R M M
UniRef90_B4FY36	I Q D M V Q E A D R N G D G E	I D F D E F F I I R M M R
UniRef90_Q9JM83	L E D M I R V A D V D Q D G K	V K Y E E E F F V R L
UniRef90_I1IGP7	V D G M I F E A D V D G D G F	V D F R E F F V R M M M
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UniRef90_U6HXF5	F R I A F A F F D K N D D G S	T T M E E L K Q L L H
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UniRef90_K3YMU1	I R M L L E A A D T D G N G T	D C D E F F V T V
UniRef90_V4L8Q0	I R N F F R R A D V D G D G H	N Y D E F F V K V M T A
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UniRef90_D7T2L0	I E Q M I K D V D K D G S G A	D F D E F F V Y M M T
UniRef90_Q5ZCK5	C E R M I A S V D V D G D G C	V G F E E E F K K M M
UniRef90_Q9M7R0	C V E M I K S V D S D G D G Y	S F E E E F F K K M M T
UniRef90_V7B0V9	C K K M V M G V D G N G D G F	D L N E F F M R M M M S
UniRef90_I1HP73	L T D M M R E A D T D G D G S	S F E E E F F T A I M
UniRef90_A0C9G2	V E N L F Q Q A D V N G S N Q	D Y T E F F I I
UniRef90_Q9LX27	L I Q M I Q K M D A N G D G C	V D I N E F F E S L
UniRef90_A5BNB3	L A Q M I E K I D V N G D G C	V D I D E F F R A L Y E S
UniRef90_Q22W39	V D K I L T V V D K N Q S G E	D Y S E W V A
UniRef90_A2DG97	I I R R M I S D V D T D G T G A	S F A Q F I L Q M M T
UniRef90_J0DZZ5	L N A M F N A A D K D K D G N	D L D E F F L S I
UniRef90_S8GC12	V L E L M R E Y D K Q S T G Q	D Y S D F F L E I M T
UniRef90_B5E054	L Y D M I D E I D L D G D G T	D F S E F F L Y M M
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UniRef90_UP10003EAAE8E	C A R M I A A Y D G D G D G R	S F R E F F R A M M E
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UniRef90_Q5CJK3	W K E M I S G I D S N N D G D V	D F E E F F C K M I Q
UniRef90_J3JWQ0	L L D I I T E V D K D G N G L	E Y S E F F I S V C M
UniRef90_B3L0H8	V D N I L K E V D F D K N G Y	
UniRef90_UP100032AB5CE	C R R M I E G V D K N R D G F	V C F E D F S R M M E
UniRef90_D8REQ6	C N R M I G G V D S D G D G F	V N F E E F Q R M M

1 10 20 30 40

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UniRef90_H3GSU4	T T L E K A K D H G V
UniRef90_V4S5K7	S L S E E E I K E M F K A M D T D N S I T F D E L K A G L R R Y G S T L K
UniRef90_UP10003C91C85	P A D L Q A L I E E V D S D G H D Y T E F I A A T M D K K M K E D
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UniRef90_D0U6N4	M T E S E Q S E M Q E Q
UniRef90_Q7Q560	A G M K D S D L E Q L M N D V D S D G S I D Y T E F V A A T L D K R Q Q E D
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UniRef90_R7TB67	L T D N D V K
UniRef90_A8HSJ3	A G A E E E V D R I M A D S D G S G E D Y S E W V V A T M D K R K T N E
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UniRef90_UP10004626A66	L H A E D I K K A V G P Y T A V D S F D H K K F F Q M V G L K K K S P E
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UniRef90_K1R028	S M D
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UniRef90_B6TJ23	T E L E L D N M R E V D G D G D S L P E F I E L N T K G V D S L E
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90 100

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 L F D N N R D G T V D M R E I L C G F S R N S Q G D D
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 □ V K M M I R M F D T D G T I N F E E F C G L W G F □ L A
 Y L T Q N L L T Q D E L S
 D Q D D D G Q V D F R E □ L C □ I G L S T □ L N Q A
 A A M A S S C K G G R I A I E E F A H F L K L P V S P A
 A L F D R D G D G T I D F R E Y V T I L C R P A N T E E
 L F D K D G H G S L N F R E F L A F V S S H T S F S S S
 T M D P N
 G R V D F N D F □ V Q L M A P K M L E E R
 V Y Q I V A D M E K M G S I S F N D F L E S I T □ L K R E S K E
 K E □ L E S F A A M A S S C K G G N I T □ E E F A R I L K L P V N P A
 L F D R N G D G T I D F R E Y □ L S V L C N P A N T E Q
 A A I A N A S K G G R I G □ E F A N Y L K L P V S E
 □ V K K D E V L R M M Q D C A A R D Q H N F T D L M T E R F A Q R D P R Q
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 N G K □ H P E F □ L K V M H N H E K L P N
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 □ V E A R R K L L K T A G I L T D V E A L S A R E M V S K S □ D
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 L K A A E L R A V L Q E I D E D E R I □ D F Q T □ T K L L N A Q E K P D D
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 I V D V N G D G K I Q Y E E F R V F V E A A E R Q
 N P T E A E L Q D M I N E V D A D G T I D F P E F L N L M A R K M K S E E
 N P T E A E L K D M I N D V T A M G K V D V S N □ C Q I I G R R K S S P T
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 P E D
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 N K E R
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UniRef90_T1KV89	I E D I I N E F D V H N D K F I	D F N S F L T M M S A
UniRef90_H3GLG1	I D A L I D E I D A D G N G S I	T F D E F A R V
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L F D Q D G S G Y I S L D E L M E G L Y L K G D P V D
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 M F D R D H K G G V N F N E F S G V W K Y I T
 L T D E E V A
 P E N D I F K A G D T N E D S R L D F G E F L Q Y L K D H E K
 S I P E E E L D A M L Q E G K G P I N F T V F L T L F G E K T D P E E
 Q A L G H K Q E L S F D D F K K I V H S R N S F F A
 E V N K I L H I V D L N G Q V D F S E F L M A S M N Q E K S L E
 R E D K N K
 N G S V K F E D F V M A L S L R G T V H E
 E A E E L F R R F D K D G S G T I D F N E F L L T L R M S R A R K E
 A A V D E F T S S G D
 R V A D V N R R G R L S F D D F H V F E T L L K R P D A
 L L E I R S R E P A
 L G D D A E K K I F R A G D T D G R L D F E E F T H Y L K D H E K
 M A T P M P S E A
 I S D E D S L A K R Q R T H D Q

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

V D Q M F S S A D S D G S I S F R E F L D I M V L K G S P E E
 R D I D K D G K L N F Q E F F H G L F D L I R S Y D
 D L N N D N K I Q I D E F E Q L F T N Q K S
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 K L S K E E I Q
 D S K H D G V I E F A E F L S V F H P E A P Q S D
 D A L D R L E E L R E F A N F D F K K Y M R W M N H K K S R V M
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 UniRef90_L5M410
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UniRef90_V4V2Y2	A F K M I L E A D S D G D G Q V N Y E E F A R M M
UniRef90_C1EOB6	V E V W L K E F D K D G D G L I S R A E F C A G M T
UniRef90_UPI0002653448	T S A L F E A A D T D G S G A I S F
UniRef90_I1HNT9	I D K T F E D A D A D K D G K I S Q E E W K E F V
UniRef90_Q66JK2	Y D V L I R K F D R Q R R G Q V A F D D F I Q
UniRef90_U61HZ9	L G D I I N E G D I D G S R T I D F P E F L T L M T
UniRef90_UPI0003EE3E37	S K K I L Q S I D S D G T M T V D W D E W K
UniRef90_J7MHV8	L K D I F Q K M D E D N S G E V S Q E E F I H
UniRef90_UPI0003F09E2D	V E Q M F A L T P M D L A G N I D Y K S L C Y V I T
UniRef90_UPI0003D7297F	I D E L A S I V D F N K D G N I D F N E F L K
UniRef90_H3JSS4	I K F L F K V Y D L D G D G L I Q Q S E L Q K V M K A
UniRef90_E0VJ88	I R S I L K K A D T D E D G V L D L N E F L A L V K S
UniRef90_A0DUC8	C N A
UniRef90_M4DGV2	A E A A V K Q S D L D G D G M L D F E E F A Q L L K G
UniRef90_U3IV29	L K E F F Q K M D K N K D G V V T L D E F F I E
UniRef90_F1SNB9	E E Q V F R K F P Y D K D G V V T P E E F M N
UniRef90_Q1D9Y7	L E I A V D I V D T D R T G K I S W N E F K A W W N S
UniRef90_M5G314	C D W K L Y L G R K D G A H V L G Y N E F T Q L M K G
UniRef90_R1B6R4	A R A L M K L M D A D G D G R I A W D E F S A A L G A
UniRef90_J3SFS86	A G K I L Q S M D A D G T M S V D W N E E W
UniRef90_G0SOF1	V R M M I R M F D S D R S G T I G F E E F C G L W
UniRef90_T1L4L5	V K M M I G M F D R D G N Q T I D Y N E F K Q L W K
UniRef90_S2KBH0	V R T M V N M F D K D N S G T I D F N E F A G L W K
UniRef90_W2S057	L D W A F Q L Y D I N G D G K I S Y E E M A I V T A
UniRef90_UPI0003ADFEE6	V R Q M F Q E A D T D E N G T L T F E E F C K M M
UniRef90_UPI0004421A3	L D D L M E Y C D E D K D G F L N F V E F A N F L T
UniRef90_F4XUT5	L N F V F S S M D V D N S G E I G F E E F G E L L
UniRef90_UPI0002C36130	L D A M L R E A S G P N F T M F L N M
UniRef90_Q7PFP7	L K G M I A E V D E D K D G K I S F R E F L
UniRef90_UPI0002C67598	L K N M I K E V D E D L D S K L S F R E F L L I F R
UniRef90_U9UY92	L K A K F D E I I D T N Q G G Y I L F D E F C
UniRef90_H2Z7Y3	L E E M L Q E I D Y D G D G V V T L N E W Q
UniRef90_G1TW72	C E R V L D E A D G D H D G R I S L E D F Q N M I
UniRef90_UPI000440E433	L I E I I I Q Q I K M K W G G H V D F D D F C E L M
UniRef90_R0G0D9	C V V M V Q A V D A D E D G F V N F E K I K T M M S S
UniRef90_B3S424	V N L I I I A R F D P Q S R R G L K M D M F I Q V
UniRef90_M4DN40	C G R M I R A H D K N L D G V I D F E E F K N M M
UniRef90_V5HAU9	L Q E I I V E R A D W D S N R M L S F E E F T R M V H A
UniRef90_B3RRJ3	F R E I I I N R L D P N R N R G Y I S Y K E F M D I
UniRef90_K1RDA2	I D N I Y D E S D I D E D G T I S Y P E F E N I V E
UniRef90_M3ZX77	L E V L L A L A D G N S D G K I C Y Q D F V N L M
UniRef90_G0QYB9	Q L N Y V N R F D K N N D G Q I S F L E F K I I L E
UniRef90_UPI0003B400D4	M S A V A D I F D R D G D G Y I D Y Y E F V A A L H
UniRef90_E4ZVS9	V R M M I R M F D T D R S G S V N F D E F C G L W
UniRef90_L7M239	V E K F I T V S D T G K D G T V D F A E F V H Y I
UniRef90_F6YQQ4	L K E M I R E V D E D L D S K L S F R E F L L I F R
UniRef90_K3YT59	L A R F V E H V D K D N D
UniRef90_C7TY25	V E M M I R M F D Q D R R N G T I S L N E F L E L
UniRef90_V7ARM8	I E K M V K V A D L N F D D G K V D F D E F E L M M
UniRef90_H3AD44	C E F I R L H F G N D R K K H L N Y S E F T Q F L Q
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UniRef90_I1HNR8	A T H A M S E A D K H D G R L T L E E M I E
UniRef90_M7B9A2	V E Q L M T G Q E D A N G C I N Y E E K R L L T G
UniRef90_L5M410	T N L V F H K I D I N H D
UniRef90_UPI000441C9A6	L N A I S R L P E V N N D G K F D Y Y K F C H L Y T
UniRef90_B5Y3F9	L A E A F D R I D S D D S G Y I S A A N L K A M L
UniRef90_G0UV50	V D K T F I E V D F D N D G Y I T F A D F E K L
UniRef90_A0DBN0	V D D I F D K V D T N K S G Y V D F T E F I T
UniRef90_A0A015JN58	L Q A M I D E F D L D E D G E
UniRef90_C3Y9W4	F G E F L K S F D E N M D G T V T H D E F
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UniRef90_K1QSK4	S E F I I S L H F G K D K Q R K I T Y S E F T Q L I H
UniRef90_A0D1T5	L I F K A L D R D E D G S I D V K E F I K Y L E
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UniRef90_UPI00042B7ADC	T R T R F K E M D W D K N G K V S F R E F L
UniRef90_B9R7D4	R A V Y V A D E N R D G Y I S E K E F Q K L L K A
UniRef90_UPI00046C229A	A Y D E L S Y A D V D G D G K V N F S D F L T I V T
UniRef90_UPI000223FED5	T A T V F Q K I D V N D D G E L T L E E F I S
UniRef90_H2YXP5	C D D I I D Q L D T D G D G E M N F A E F M S F L
UniRef90_UPI0003443990	V Y N E L R C A D I D Q D G K V N F S D F L K V L T
UniRef90_A0A23EF37	L D D I V D E I D A D G S G T V D F E E F M E V M T
UniRef90_UPI00045DB01A	V N K L A N L M D L N K D G S I D F N E F L K
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UniRef90_H2VC64	A E K I L Q S I D V D G T M T V D W N E W
UniRef90_E4XQD9	L D Q M M T E F D E D G N E V I D F D E F L A M V
UniRef90_A0A022S0E6	C T G M I A R F D L N G D G V L N F D E F K E M M
UniRef90_K4B754	C R K M I L A F D G N K D G K I N F E E F V E M I
UniRef90_UPI0002B8E810	V N T M L A T H G Y E H K E S L T L E D F Q T V M Q
UniRef90_U5CZA0	A D Y I K M Q A D S N K D G R L S L Q E M I E
UniRef90_G0QQN6	I E K L V S V L D F D K D N H I S L K E F V K F
UniRef90_V9FU45	V L D L V E D V D V Q R S G R V D F N D Y M E I M R
UniRef90_B4J7V1	L H D I I L K E I I D T N M N G Q V E L D E Y L Q M M S A
UniRef90_B9GXJ8	I D K T F E D V D S N G D G K I D Q E E W K E F
UniRef90_UPI000350EBC8	M S A V A D I F D R D G D G Y I D Y Y E F V A A L H
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UniRef90_W5K7H4	F R K F L D S F D S D K D G K V T K E E F V N

The figure displays a multiple sequence alignment of UniRef90 entries. The sequences are arranged vertically on the left, and their positions are indicated by numbers at the top: 1, 10, 20, 30, and 40. The alignment shows the conservation of amino acids across these positions. Colored boxes highlight specific residues: blue for D, red for E, green for G, yellow for C, purple for H, and orange for I. The alignment spans from position 1 to 40, with the last few positions being mostly empty or filled with gaps.



Multiple sequence alignment of UniRef90 proteins. The alignment shows conservation across 80 positions. A color scale at the top indicates conservation: black (highly conserved), blue, green, yellow, red, purple, and grey (low conservation).

UniRef90 accession codes listed on the left:

- UniRef90_UPI0003599A2E
- UniRef90_F0ZLZ7
- UniRef90_UPI0002A4834F
- UniRef90_W5EZP2
- UniRef90_UPI00022B570B
- UniRef90_J9JZ65
- UniRef90_L1I7U3
- UniRef90_J1LLG4
- UniRef90_A0DX59
- UniRef90_E0YL14
- UniRef90_Q231P8
- UniRef90_S9VHE8
- UniRef90_UPI0003288220
- UniRef90_UPI0002BCCE84
- UniRef90_B9QPX4
- UniRef90_B1N4A1
- UniRef90_Q4SDE4
- UniRef90_UPI00045DE92C
- UniRef90_UPI000393EEF9
- UniRef90_UPI00035A2644
- UniRef90_M1VX29
- UniRef90_R1EO10
- UniRef90_UPI0002036A97
- UniRef90_F7FFU4
- UniRef90_UPI0002B4B112
- UniRef90_B9DI81
- UniRef90_UPI0003F17709
- UniRef90_E0VSY4
- UniRef90_UPI0003C26765
- UniRef90_UPI0004404D20
- UniRef90_W5LLV9
- UniRef90_A8J3V9
- UniRef90_K3XLQ6
- UniRef90_Q0P410
- UniRef90_Q00Z29
- UniRef90_M5X7T8
- UniRef90_G7YMX8
- UniRef90_G1RMS7
- UniRef90_UPI000161EA6A
- UniRef90_G1UCY6

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lupas_14

lupas_28

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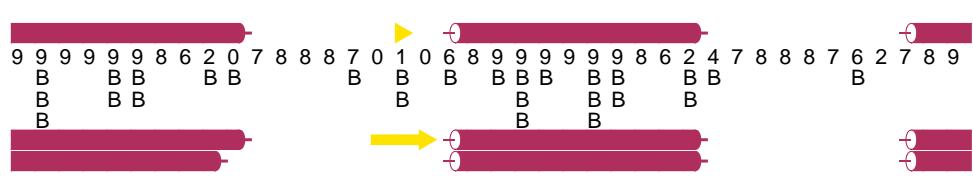
conf
sol25

sol25
sol5

sol0

jhmm

jpssm



	90	100
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UniRef90_F0ZLZ7	L S A V I T K I D A D N S G F I	S F E E F V E Y M V S
UniRef90_UPI0002A4834F	I S D L A V T I D S N Q D G S I	D [D] D E F M E
UniRef90_W5EZP2	L K D M V E E V D A D G S G T	
UniRef90_UPI00022B570B	I C D L A Q S I D F N K D G R [V] D [D] N E F [L] E	
UniRef90_J9JZ65	I I N M L N A A D E D G D G Q V N L T E F M R I I	
UniRef90_L1I7U3	L D S F I E Q T D [V] D G D E Q I	D L E E F E H L A R A
UniRef90_I1LLG4	C T T M I G H F D L N G D G [L] L C F D E F R V M M Q	
UniRef90_A0DX59	V D K V F K W D I N K N G E I	D F Q E F F [L]
UniRef90_E0YL14	V R M M I G M F D K Q N T G T I V	S F Q D F G A L W K
UniRef90_Q231P8	V R Q I F K E C D T N G D G [V] L	D K E E
UniRef90_S9VHE8	V D K T F I E V D A D R D G F I	N F E E E F E A L
UniRef90_UPI0003288220	C D K V I E E A D L D G D G K L	G F A D F E D M I
UniRef90_UPI0002BCCE84	V E D A L R S A D I D G D G H V	N F K D F F L A V M T
UniRef90_B9QPX4	V D L M V R E A D R T G D G R L	S F G D F E R V F R
UniRef90_B1N4A1	C R H L M R I I F D V D F S G S I	S F Y E Y L A M M K
UniRef90_Q4SDE4	L H E I L N E V D L N K N G Q V E I	I D E F L Q L M S A
UniRef90_UPI00045DE92C	L R R F L D N F D S S K D G Q V T L	E E F V A M M T S
UniRef90_UPI000393EEF9	L E I L F D C D L D K D G L I	N Y R D F A N F L
UniRef90_UPI00035A2644	C I T F L R E T F L N R D A A V D F H R W I A M	
UniRef90_M1VX29	V E L L F R T Y D K R G E G V M S F D L F V Q	
UniRef90_R1E0IO	V Q R M M L V G D S D G D G R I	D A E E Y R R L
UniRef90_UPI0002036A97	V K Q M F K E A D T D D N G T L	G F D E F C T F M M S
UniRef90_F7FFU4	L D Q M F A A F P P D V T G N L	D Y K N L V H I T
UniRef90_UPI0002B4B112	A E Y I I Q Q A D A D K D G R L	T L A E M I
UniRef90_B9DI81	V K Q M F R E A D T D H Q G T L	G F E E F C A F M M S
UniRef90_UPI0003F17709	L D R T V Q E A D E D G D G A V S F L E F V K	
UniRef90_E0VSY4	I D N L I K M A D P K G T G R V	Y Y E G F V E
UniRef90_UPI0003C26765	A L F D Y C D L D K D G L I	D Y L E F A N F L
UniRef90_UPI0004404D20	T N L L V F H K I I D T N D D G E L	T L E E F I N G M E
UniRef90_W5LLV9	A N R I I F V R L D K D N N A I I	S L E E F I E
UniRef90_A8J3V9	I E E L M L E A D P D G S G E L	E F D E F L S L M
UniRef90_K3XLQ6	V D R T F D Q A D T K G D G R I	D Q E E W T A F A K
UniRef90_Q0P410	L I E I S Q H K M R M G G R I	D F E D F V E L I
UniRef90_Q00Z29	I A K L I F R D A D V D G S G E L	D F E E F L A V L E
UniRef90_M5X7T8	V D K V M K E F D T S C D S R I	D L Q E F F L T
UniRef90_G7YMX8	A A I I L E S A D T D G D G R I	S V E E F I D I M R S
UniRef90_G1RMS7	V D K I F K K M D Q D K D D Q I	T L E E F K E A A K S
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UniRef90_G1UCY6		

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