

1	10	20	30	40
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UniRef90_K8ACX8	M N Q A   Q F P D R E E H W D E T Q Q A I C F P A L V N G L V T C C A I   K G T T L			
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QUERY

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50            60            70            80

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

QUERY	Q G H I Q V E R V D 90
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UniRef90_UPI000471F380	D G W F W I
UniRef90_D3VHU8	F G R Y S L P
UniRef90_L7BRH8	Q G W V W L
UniRef90_G9Y309	D G W I W I S
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UniRef90_H3RGN8	E G W V W L S P
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UniRef90_D0I2T4	D G E I W I
UniRef90_A5F4C2	L G Q I E I T R
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UniRef90_N9U2C2	D G S I T I
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UniRef90_UPI0002D4F582	Q G E I W V R
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UniRef90_K8WG93	D G L Y V L S E
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UniRef90_W0HTV5	D G R Y C L S
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UniRef90_R9PFX2	N G E I I V
UniRef90_W1Z7N5	A G Q I E V N L V D
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UniRef90_UPI0004714D1F	Q G L I Q L
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UniRef90_F6G0L4	S I D F P P R P H Y S A T D L T L C I A N V D G S P A C Y A V V T A E A L L				
UniRef90_A0A038GVP4	S I D F P P R P H Y S A T D L T L C I A N V D G S P A C Y A V V T A E A L L				
UniRef90_E5AUV4	M N Q A I   P E F R G W N L T V G F T A K V D D R Q V D C C S I   T A E A L L				
UniRef90_E3DI16	M K Q Q I   I D F P E A G A Y R D N N L T V E F D A I V N G E R V R C A I   S V E A L L				
UniRef90_E5ARW8	M K Q Q I   I D F P E A G A Y R D N N L T V E F D A I V N G E R V R C A I   S V E A L L				
UniRef90_M4UQ98	M N E S I   I D F P E A G A Y R D N N L T V E F D A I V N G E R V R C A I   S V E A L L				
UniRef90_UPI00022C7C80	M N E S I   I D F P E A G A Y R D N N L T V E F D A I V N G E R V R C A I   S V E A L L				
UniRef90_S9TGD7	M N E S I   I D F P E A G A Y R D N N L T V E F D A I V N G E R V R C A I   S V E A L L				
UniRef90_E5ATB4	M N E S I   I D F P E A G A Y R D N N L T V E F D A I V N G E R V R C A I   S V E A L L				
UniRef90_D8NT34	M N E S I   I D F P E A G A Y R D N N L T V E F D A I V N G E R V R C A I   S V E A L L				
UniRef90_Y0KUU5	M N E S I   I D F P E A G A Y R D N N L T V E F D A I V N G E R V R C A I   S V E A L L				
UniRef90_F4AH72	M N Q A V   Q I Q D G F E V L E E K M V I R L I V S G L I M H C H I   S G V G V				
UniRef90_R4WNY3	M N Q A V   Q I Q D G F E V L E E K M V I R L I V S G L I M H C H I   S G V G V				
UniRef90_K0DNP5	M N Q A V   Q I Q D G F E V L E E K M V I R L I V S G L I M H C H I   S G V G V				
UniRef90_B2JMY5	M N Q A V   Q I Q D G F E V L E E K M V I R L I V S G L I M H C H I   S G V G V				
UniRef90_Q472V1	M S Q Q I   I L F P D V P A Y C A A G P S L Q C P A Q I D G A A A T F E I   T A E A L L				
UniRef90_UPI00035CDCD3	M N Q A V   I L F P D V P A Y C A A G P S L Q C P A Q I D G A A A T F E I   T A E A L L				
UniRef90_UPI0002FFF636	M N Q A V   I L F P D V P A Y C A A G P S L Q C P A Q I D G A A A T F E I   T A E A L L				
UniRef90_G8MAT9	M N Q A V   I L F P D V P A Y C A A G P S L Q C P A Q I D G A A A T F E I   T A E A L L				
UniRef90_B1KAF3	M N Q A V   I L F P D V P A Y C A A G P S L Q C P A Q I D G A A A T F E I   T A E A L L				
UniRef90_A0A038GQZ6	M N Q A V   I L F P D V P A Y C A A G P S L Q C P A Q I D G A A A T F E I   T A E A L L				
UniRef90_UPI0002DEBF89	M N Q A V   I L F P D V P A Y C A A G P S L Q C P A Q I D G A A A T F E I   T A E A L L				
UniRef90_D5WHT3	M N Q A V   I L F P D V P A Y C A A G P S L Q C P A Q I D G A A A T F E I   T A E A L L				
UniRef90_F7NQT4	M N Q A V   I L F P D V P A Y C A A G P S L Q C P A Q I D G A A A T F E I   T A E A L L				

50                    60                    70                    80

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UniRef90_J7TVG3	Q S R Y G T A P G E D M L V L F R R N R W D L E E E F A E F I E K G E T D E		
UniRef90_V4J8R0	E V P E S E A D P V M H F R T H Q F D Y E M Q A E E L I E D E H Y S S		
UniRef90_D5CDD4	K R R F G G S		
UniRef90_F9S611	E R L S G Q S I A T S Q Q A L E I F A Q Y R F D L E E L A E A L I E E E F N P		
UniRef90_A1S1K9	A A L S G E E V T V T N A A A L L E S V R F E V E E M A E S L I E E D A F D E		
UniRef90_L8D4X1	G C T F D N N Q D A M T H F E K Y R F D Y E I Q A E E K L E A E L F T A		
UniRef90_U1KUJ5	A T S L T K E Q A L T H F K A H Q F D Y E M Q A E Q R I E D E A Y S A		
UniRef90_A4CDF8	E L T N F K L A N K N E A L V Y F Q L Y K F D Y E E L A E Q L I E D E E Y D D		
UniRef90_Q13XR9	E D H F G A A S L R E D D L I S A F N S N R H P I E H A A R Q L L H E		
UniRef90_N0AFS7	E D H F G A A S L K E D D L I A F A D L H R G K I E H A A R R M L D E		
UniRef90_F9SEJ8	S R I L S C K D I E G G E Q A L A V F S E L R F D I E E L A E E L I E E E E Y D S		
UniRef90_Q12T94	G V L A Q E V N C H A A N A K V L F E Q Y R F D I E D W A E S L I A Q E A F N E		
UniRef90_A7N126	E K L S G L I T A N E Q A A E A F V I D N R F D L E E L A E E L I E D E A F N E		
UniRef90_Q08A17	S E L C D K Q V V S G S N V C L F E Q C R F D L E D Q A E E L I E Q E A F N C		
UniRef90_UPI000474611D	E N L S Q L Q I D D E V M A L K V F S E Y R F D L E D L A E E L I E A E E F N Q		
UniRef90_R8ASX3	G V R A G C L V A P E Q A L A I F R Q W R W D I E E E A E E A I R Q D A F D D		
UniRef90_UPI000347C436	E R S D A L T H F A Q L R F D Y E E V A Q Q L I E D E E F T A		
UniRef90_U1L158	L T K Q S K E S A I K D F E S K K P F D Y E D I A A E S A I E D E L Y N D		
UniRef90_U0FTX7	E V L A G Q K L Q G A E Q A L V C F S Q H R F D L E E L A E E L I E D E T F N Q		
UniRef90_F0LQ18	S R I L A A Q P I D G E Q Q Q A L A I F Q T L R F D L E E I A A E L I E E E D Y N Q		
UniRef90_B2JH67	E D H F G A R S L R E E D L C D A F T E H R P D L E V A A R R M L N E		
UniRef90_I1DZT5	Q P P D N F L Q Q I K A D A F H W E D A A E Q A I A D D A Y N T		
UniRef90_UPI00035FC120	E D H F G A A S L L E R I L G A F D A H R T A F E R A R R M L E E		
UniRef90_U3U3L3	Q Q R F G A		
UniRef90_UPI00036E9A16	E D H F G A A S P R F E D M L G A F D A H R P R L E A A A R R L L S E		
UniRef90_UPI0003681370	S E E P D Q F I T S I K A D A F D W E D R A E Q A I A D G A Y T K		
UniRef90_UPI0002D9C8D1	E K L S A Q E V K S P Q Q A L D V F N Q Y R F D		
UniRef90_U1KIG1	P I N E Q S K A L A H F A Q H Q F D Y E I Q A E Q L I E D E A Y Q L		
UniRef90_UPI0003958625	S A L A G C A V D T D N A Q A I V E Q V W F D T E E Q M E A A I E S E A F E P		
UniRef90_R1GQ17	E K R E R V A L N T E E A I L A A F A G N R F D L E E L A E E A I E E E D F N A		
UniRef90_F2LM03	E S H Y G A A S C G E G D L R H A F A A H R D E I E E A A R R M I E		
UniRef90_A0A024RH84	E D H F H A A S S R E Q D L V N A F C R H R P A I E R A A R C L L E E		
UniRef90_UPI000364A160	M E R F G A D E P H L L D A F E R H R G A I E K I A E A L I E E H R E S A		
UniRef90_B2TG63	E D H F G A R S W R E D D L V T A F D A H R H P I Q Q A A R N L L N E		
UniRef90_B4F1M2	K A R F G D N S N G L C L F K Q H R W		
UniRef90_F2L8H5	E D H F L A A S A R E S D L V D A F Q R H R E T I E D A A R R L L Q E		
UniRef90_R4WGP6	E D H F G A Q T Y D S I G W I S A F D A A R P H I E A V A R E		
UniRef90_I1B3K3	A Y R F T G D T P E Q W L A S F R Q H R W D L E E E A E N L I Q E Q S E D D		
UniRef90_B2TFJ7	E D H Y G A A S P R L E D M V G A F D T H R A R I E A A T R R L L I S E		
UniRef90_C5AMK6	E S H F G A A S P R F E D M V G A F S T H R P R I E A A A R R L L A D		
UniRef90_A3NHS2	E D H F G A A S P R F E D M V G A F D T H R P R I E A A A R R L L S E		
UniRef90_UPI000375926D	E D H F G A E S L R E D D V Q R A F E V N R R A L E H A A R K M L Q E		
UniRef90_J1QMX4	S T L S A A D F L Q V Q V Q A D S F Y W E D L A E A A I A A D T Y N S		
UniRef90_UPI00034DFE7A	E D H F G A A S P R E E D L I Q A F N A N R P A I E R A A R T L L		
UniRef90_B2JKB4	E D H F G A D T N D T D G W R R A F D A G R E R I E A V A R E		
UniRef90_D4I2T6	L H R F R H A E G D A L T C F R L N R W E L E E L A E R A I Q H Q Q E D A		
UniRef90_V6MF24	I T R F G V G E G I L F K Q N R W D I		
UniRef90_A4JN18	E D H F G A R S L L E R D L L V A F E A H R P A I E A M A A R M L A E		
UniRef90_I9W5B6	K D H F G A K S I R E T D L H D A F R A H R A E I E S A A R W M L		
UniRef90_K6YKG7	D K E S L K L Y N T K Q F E E I T E K N L K Q D K F N S		
UniRef90_UPI000346A32B	E D H F G A R A A D R D A W I R A F D S G R S R I E A V A R E		
UniRef90_E1T8M8	E D H F G A R S S S S A D L L N A F R R H R T E I Q N T A R D L L D Q		
UniRef90_W6XMF4	E D H F G A R S P R E E D L V D A F V A H R V E I E L A A Q R L L N E		
UniRef90_B6EP30	A S E S G E T I T N E L D A L R I F E E Y R F D E E H A E A L I E D E E F N A		
UniRef90_S6BIA4	Y D H F E A E Y S D P L F A F M T C R K L V E Q I V E R R I R E Q R L D A		
UniRef90_K6Y364	Q D E A A E F Y Q L H Q F E L E E Q L T S L I S Q E K W N A		
UniRef90_U1LED3	A T K F E Q D A A I T H F A Q H Q F D Y E M Q A E Q L I E E E A F N E		
UniRef90_G5LUE8	A Y R F G G E T A E Q W L A I F R E Y R W D L E E E A E A L I L A Q Q E D D		
UniRef90_UPI00039B2FC0	K R R F G G S N P L E V F C R F L Q R A F E S H R S S I G E A A E H L		
UniRef90_G8ML48	E D H F G A A S W R E E D L Q R A F E S H R S S I G E A A E H L		
UniRef90_V5PS90	E D H F G A Y S A R A D D L L H A F E H G R S H I E A L T R Q		
UniRef90_V2J110	E S H F G A R S P R E E D L V R A F T D H R P R I E S I A Q S L F E		
UniRef90_UPI00034815A6	E D H F G A K S C N V D L M A A F R A N R P A I E K M T E R		
UniRef90_H1SSD3	E D H F G A R S H R A E D L L I L A F E G H R K D I E G V A R Q L F E		
UniRef90_B2UIS3	E D H F G A L S C R S D D L L S A F K V H R G D I E E V A R L L F E Q		
UniRef90_A0A034TN82	E K L S G S L I E T E Q Q A I K V F T D Y R F D L E E M A E E L I E D E A F N E		
UniRef90_F6G0L4	E D H F G A R S Y R Q E D L L L A L E T H R D A I E M A R A L		
UniRef90_A0A038GVP4	E D H F G A A S W R E E D L Q R S F E N N R A V I Q G A A E Q L L		
UniRef90_E5AUV4	E D H F G A Q S P N P G D L L A A F D R H R S A I E H A A R N V L Q		
UniRef90_E3DI16	L R R F H S E R D A L A C F R L N R W E F E E L A E R A I K H Q Q E D A		
UniRef90_E5ARW8	E D H F G V V S N D R D G W R A F D R G R A R I L D T A R E		
UniRef90_M4UQ98	E D H F G A Q S C R S E D L V R A F M S G H R N D I E A V A R A M F E		
UniRef90_UPI00022C7C80	E D H F G A K S P R E E D L L D A F S N G A A R I R A V C A E A L D E		
UniRef90_S9TGD7	E E H F G A R S W R Q E D D L L Q A M E T H R G T I E D M A R S L		
UniRef90_E5ATB4	E D H F G A A S A L E S A L L Q A F E R G R D P I H R V A R L A L E D		
UniRef90_D8NT34	E D H F D A R S I S G A D L V A A F E H R A A I E A V A R		
UniRef90_Y0KU5	Q D H F D G G I L G A D L V A T F E A N R K M I E G V A R K K L E S S R D N P		
UniRef90_F4AH72	N K M A A F Y Q D H Q F D L E E L I N E R V E E E L W D E		
UniRef90_R4WNY3	E D H F G A P S P R E E D L L D A F A G G G I A R I R A V C A E A L D E		
UniRef90_K0DNP5	E D H F G A E S P L E S A L M E A D K G R N R I R S V A E A L D Q N N G		
UniRef90_B2JMY5	E D H F G A D S P L E E A L L G A F E R G R A R I R S V A E A L D E N		
UniRef90_Q472V1	E D H F G A R S Y L Y E D L A S A F S S H R K A I E N V A R S M F E		
UniRef90_UPI00035CDCD3	E D H F G A R S V L E A E L V G A F Q R G R E S I H R V C C D A L E Q		
UniRef90_UPI0002FFF636	Q D H F G A R M D P E S L I E A F R K G R P D I E L L A		
UniRef90_G8MAT9	N D H F G N S G T S S H D L L S A F E G G R M Q I E D A A R R A L E		
UniRef90_B1KAF3	E D H F G A R S A L E A D L R D A F E R G R A R I E A A C A D M L A S G N H D		
UniRef90_A0A038GQZ6	E D H F G A T S A R E E D L L D A Y		
UniRef90_UPI0002DEBF89	E N L S Q L Q I D D E V M A L K V F S E Y R F D L E D L A E E L I E A E E F N Q		
UniRef90_D5WHT3	E D H F G A E S A L E P A L M A F D R G R Q R I L R S V C A E A L D Q		
UniRef90_F7NQT4	Q G W D N Q S W L E Q I K E D C F Y W E E Q I E E A A K Q D R F N T		

UniRef90\_E7C370  
 UniRef90\_UP10003129143 A G Q I E I K A L N  
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 UniRef90\_D5CDD4  
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 UniRef90\_A1S1K9 W G R I E L  
 UniRef90\_L8D4X1 S G E I E L S F I  
 UniRef90\_U1KUJ5 Q G E I E L  
 UniRef90\_A4CDF8 N G L I V I T  
 UniRef90\_Q13XR9  
 UniRef90\_N0AFS7  
 UniRef90\_F9SEJ8 S N R I Q I K A L  
 UniRef90\_Q12T94 Q G A I L L T  
 UniRef90\_A7N126 E G H I I I  
 UniRef90\_Q08A17 S G D I I L  
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 UniRef90\_R8ASX3 L G M I H L  
 UniRef90\_UP1000347C436 E G Q V V I P P L  
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 UniRef90\_UP10003681370  
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 UniRef90\_U1KIG1 D G S L V I  
 UniRef90\_UP10003958625 S G E I W V R  
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 UniRef90\_R4WGP6  
 UniRef90\_I1B3K3 Q G W V W L P  
 UniRef90\_B2TFJ7  
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 UniRef90\_I9W5B6  
 UniRef90\_K6YKG7 D G E L W L T A  
 UniRef90\_UP1000346A32B  
 UniRef90\_E1T8M8  
 UniRef90\_W6XMF4  
 UniRef90\_B6EP30 S G E V E I K  
 UniRef90\_S6BIA4 D G G I R L S E T D  
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 UniRef90\_G5LUE8 H G W I W L S  
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 UniRef90\_G8ML48  
 UniRef90\_V5PS90  
 UniRef90\_V2J110  
 UniRef90\_UP100034815A6  
 UniRef90\_H1SDD3  
 UniRef90\_B2UIS3  
 UniRef90\_A0A034TN82 E G Y I I I  
 UniRef90\_F6G0L4  
 UniRef90\_A0A038GVP4  
 UniRef90\_E5AUUV4  
 UniRef90\_E3DI16 Q G W V W L S  
 UniRef90\_E5ARW8  
 UniRef90\_M4UQ98  
 UniRef90\_UP100022C7C80 N G  
 UniRef90\_S9TGD7  
 UniRef90\_E5ATB4  
 UniRef90\_D8NT34  
 UniRef90\_Y0KUU5  
 UniRef90\_F4AH72 N G V I H I N A  
 UniRef90\_R4WNY3 N G  
 UniRef90\_K0DNP5 E G V I  
 UniRef90\_B2JMY5  
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 UniRef90\_A0A038GQZ6  
 UniRef90\_UP10002DEBF89 L G Q I E I N  
 UniRef90\_D5WHT3  
 UniRef90\_F7NQT4 D G V L H L

Sequence logo showing the conservation of amino acids at each position of the protein sequence. The x-axis represents positions 1, 10, 20, 30, and 40. The y-axis lists UniProt entries. Positions 1, 10, 20, and 30 show high conservation of Ile, Ser, Phe, and Leu respectively. Position 40 shows high conservation of Leu.

lupas\_21  
lupas\_14  
lupas\_28  
jnet  
conf  
sol25  
sol5  
sol0  
jhmm  
jpssm

	50	60	70
UniRef90_V5BYC7	R <b>V</b> K F G A S D K L M Q S V V Q H R M V I Q E A A K R L I E R D D F Q E		
UniRef90_R4WGX3	N D <b>H</b> F G N N G T S S H D L L S A F E G G R V Q I E E A A R R A L E		
UniRef90_D0HJK0	Q E <b>L</b> S G E A L V E S Q H V M T V F S E W R F D L E E L A E Q A I E D E M F N S		
UniRef90_V5PRT0	E D <b>H</b> C D A K S I N A E D L M V A F R A H R P S I E K M		
UniRef90_Q1LI09	E A Y <b>C</b> G A R S P R E E D L V R A F T T N N R A R I E Q L A H H S M F E		
UniRef90_UPI00047480DA	E D <b>H</b> F G A R S Y R F E D L L A A Y E R H K P D I E S V A K S L F E		
UniRef90_Q15ZX3	G D M D E F F Y Q A N Q F D L E E T I S E L V E N E Q W D E		
UniRef90_UPI000364DAEE	E E <b>H</b> F G A R S Y R S E D L V P A F Q R H R Q D I E Q V A G S L F E		
UniRef90_K2IZT6	F D E S Q L L A A Q A D D L I N R E Q L R M E D V I E E A L A A E A L D V		
UniRef90_Q39N96	E D <b>H</b> F G A Q S A L E A D L R D A F E H G R A R I E K A A Q R V L E		
UniRef90_K0DNG0	N D <b>H</b> F G N G G P S A H D L V G T F E A N R A Q I E K A A E Q R I M A R A L D P		
UniRef90_D3NU36	Q G I V G H T P K P D E A V Q Q V C M N R P L F E R A A E Q R I M A R A L D P		
UniRef90_G8AMT0	Q T L L A G H <b>L</b> P K P D E A L Q Y V C L N R P V F D K A V E A R I M D R K L D P		
UniRef90_A9ARI0	E D <b>H</b> F G A R S A L E A D L R E A F E R G R Q R I A E A C A D V V A D G		
UniRef90_UPI00047E4FE9	R S L L L G H R P T P A E A V E I Y H L H R A T I E R A A E L R I E E R R L D P		
UniRef90_J3CUJ8	D D <b>H</b> F G A D G L D K E G R V Q A F L R S R S K E Q M A R A		
UniRef90_UPI000464C097	Q D <b>H</b> F D A R G G P F E N D L L D A F R R G R S R		
UniRef90_B3R4L1	W E G F S A D Q V L S L E E A F R A G R E T E R A A V V L I E Q G A		
UniRef90_T1D204	D D <b>H</b> F H G D N K D K L E V F V R G N R G A E E I A R R K Y L A G R R E A		
UniRef90_UPI000363807E	Q D <b>A</b> G Q R R F K P A E L L A C <b>Y</b> F A A L G P R E A I A R A K L R E R P D G I		
UniRef90_A4JQX4	E D <b>H</b> F G A R S A L E A D L R D A F E R G R A R I Q A A C A E L L A S E G		
UniRef90_F0G2G2	E D <b>H</b> F G A R S A L E A D L R D A F D S G R P R A Q A C A E M L A E G		
UniRef90_D8P4F4	E D <b>H</b> F G A R S Y R S E D L L K Q A F T G H R D D E S M A R A L F E		
UniRef90_UPI0002E8A48A	E D <b>H</b> F G A R S Y R F E D L L A A Y E R H K P D I E S V A K S L F E		
UniRef90_T1C5D6	D D <b>H</b> F K G D D K D K L I E V F K S N R Q V E F D A R R K Y L A G D T E A		

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UniRef90_UPI000364DAEE	Q G E   L   H
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UniRef90_Q39N96	
UniRef90_K0DNG0	D A N   I   H   L   T
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