

	1	10	20	30	40																																				
QUERY	V	L	S	E	G	E	W	Q	L	V	L	H	V	W	A	K	V	E	A	D	V	A	G	H	G	Q	D	L	L	R	L	F	K	S	H	P	E	T	L		
UniRef90_P02104	F	T	A	E	E	K	T	L	I	N	G	L	W	S	K	K	V	G	A	N	V	E	E	V	G	G	E	A	L	G	R	L	L	V	V	Y	P	W	T	Q	
UniRef90_P02004	V	L	T	A	E	E	K	K	A	I	Q	S	T	W	G	K	I	G	G	A	E	E	E	V	G	A	G	A	L	W	R	M	F	H	A	Y	P	P	T	K	
UniRef90_G3WEX2	W	T	A	E	E	K	Q	A	I	I	S	T	S	L	W	G	K	I	G	D	V	E	E	V	G	A	G	A	L	S	R	L	L	V	V	Y	P	W	T	Q	
UniRef90_P69891	F	T	A	E	E	D	K	A	T	I	S	T	S	L	W	G	K	I	G	N	V	E	E	D	A	G	G	E	T	L	G	R	L	L	V	V	Y	P	W	T	Q
UniRef90_I1Y926	V	L	T	A	E	E	D	K	K	L	I	Q	S	T	W	G	K	I	G	G	A	E	E	E	V	G	A	E	S	L	W	R	M	F	H	S	Y	P	P	T	K
UniRef90_Q45X18	L	T	P	E	E	K	A	L	V	I	G	L	W	G	K	V				N	V	K	E	Y	G	G	E	A	L	G	R	L	L	V	V	Y	P	W	T	Q	
UniRef90_P02052	L	S	G	E	E	K	A	A	V	T	G	L	W	G	K	V				D	L	E	K	V	G	G	Q	S	L	G	S	L	L	L	V	Y	P	W	T	Q	
UniRef90_P09904	V	L	S	P	A	E	D	K	T	N	V	K	A	A	W	K	V	G	N	H	A	A	D	F	Y	G	A	E	A	L	E	R	M	F	M	S	F	P	S	T	K
UniRef90_P18975	V	L	S	S	A	D	K	N	N	V	K	A	C	W	G	K	I	G	S	H	A	G	E	Y	G	A	E	A	L	E	R	T	F	C				P	T	T	K
UniRef90_B8K130	L	T	K	S	E	R	T	I	I	M	S	L	W	D	K	V	S	S	Q	S	E	A	I	G	T	E	A	L	E	R	L	F	L	S	F	P	Q	T	K		
UniRef90_P83134	M	L	T	E	D	D	K	Q	L	I	Q	H	I	W	K	V	L	J	E	H	Q	E	D	F	G	A	E	A	L	E	R	M	F	I	V	Y	P	S	T	K	
UniRef90_UPI0003331BBB	F	T	A	E	E	K	A	A	I	T	N	I	W	K	V					N	V	E	E	V	G	A	E	T	L	G	R	L	L	V	V	Y	P	W	T	Q	
UniRef90_D9I2E7	V	L	Y	D	T	D	K	S	N	I	K	A	A	W	K	V	G	T	H	A	G	E	Y	G	G	E	A	L	E	R	M	F	E	S	F	P	T	T	K		
UniRef90_W5MM10	L	S	T	A	K	D	K	D	N	I	T	K	T	W	A	K	V	S	P	K	A	A	Q	I	G	A	E	A	F	G	R	L	L	V	V	Y	P	Q	T	K	
UniRef90_C1BX42	L	S	T	A	K	D	K	A	N	V	K	S	I	W	N	K	I	L	P	K	S	D	D	I	G	D	Q	A	L	S	R	M	L	V	V	Y	P	Q	T	K	
UniRef90_UPI000273A1C1	L	T	K	T	D	K	A	L	I	A	A	I	W	A	K	V	S	T	Q	A	D	C	I	G	T	E	A	L	E	R	L	F	I	S	Y	P	Q	T	K		
UniRef90_UPI000332FBA8	L	I	K	S	E	R	A	S	I	M	S	I	W	D	K	I	A	M	R	A	E	A	I	G	T	E	A	L	E	R	L	F	V	T	Y	P	Q	A	K		
UniRef90_UPI000350E148	M	L	T	A	E	D	K	K	L	I	T	Q	L	W	E	K	V	A	G	H	Q	E	E	F	G	A	E	A	L	Q	R	M	F	L	T	Y	P	T	T	K	
UniRef90_F6YMJ4	L	T	K	S	D	K	A	S	I	A	N	I	W	S	K	I	A	P	Q	A	E	A	L	G	T	E	A	L	E	R	L	F	L	T	F	P	Q	T	K		
UniRef90_P24291	V	L	S	A	A	D	K	A	N	V	K	A	V	W	E	K	V	A	G	N	V	G	K	Y	G	G	E	A	L	D	R	T	F	L	S	F	P	T	T	K	
UniRef90_E3TFT0	L	S	A	K	D	K	A	N	V	K	D	L	W	A	K	V	A	P	K	A	D	D	I	G	A	E	A	L	G	R	L	F	E	V	Y	P	Q	T	K		
UniRef90_Q10732	V	L	S	S	G	D	K	A	N	V	K	S	V	W	S	K	V	Q	G	H	L	E	D	Y	G	A	E	T	L	D	R	M	F	T	V	F	P	Q	T	K	
UniRef90_UPI0002C687E3	F	T	A	E	E	K	A	T	V	A	S	L	W	A	K	V				D	V	E	T	V	G	A	E	L	L	G	R	L	L	V	V	Y	P	W	T	Q	
UniRef90_P11748	T	L	S	D	K	D	K	S	T	V	K	A	L	W	G	K	I	S	K	S	A	D	A	I	G	A	D	A	L	G	R	M	L	A	V	Y	P	Q	T	K	
UniRef90_Q90487	L	S	D	T	D	K	A	V	V	K	A	L	W	A	K	I	S	P	K	A	D	E	I	G	A	E	A	L	A	R	M	L	T	V	Y	P	Q	T	K		
UniRef90_P14520	L	T	A	K	S	K	S	I	V	K	A	F	W	K	I	I	G	S	R	A	D	D	I	G	A	E	A	F	G	R	M	L	T	V	Y	P	E	T	K		
UniRef90_UPI00015150AE	L	S	A	A	D	R	A	L	L	R	A	L	W	K	I	L	G	S	N	V	G	V	Y	T	T	E	A	L	E	R	M	F	L	A	F	P	L	T	K		
UniRef90_M4AD09	L	T	D	K	E	R	V	M	I	Q	D	S	W	A	K	V	Y	Q	N	C	E	E	A	G	V	A	M	L	V	R	L	F	V	N	F	P	S	S	K		
UniRef90_M7B321										H	A	A	W	K	F	L	S	K	I	T	S	V	L	T	E					K	M	F	T	V	H	P	Q	T	K		
UniRef90_UPI00045D5A6F	V	L	S	S	A	D	K	A	N	V	K	A	A	W	K	V	G	G	K	A	G	D	Y	G	A	E	A	L	E	R	T	F	L	A	F	P	S	T	K		
UniRef90_C1FXX6	L	T	K	A	E	R	T	I	I	V	S	M	W	G	K	I	A	S	Q	A	D	A	I	G	T	E	A	L	E	R	L	F	A	S	H	P	Q	T	K		
UniRef90_F7GY95	L	T	K	T	E	R	T	I	I	V	S	M	W	A	K	I	S	T	Q	A	D	T	I	G	T	E	T	L	E	R	M	F	L	S	F	P	T	T	K		
UniRef90_UPI00044024C	L	T	T	N	E	R	T	I	I	L	A	M	W	D	K	I	A	T	E	S	E	E	I	G	R	E	T	L	D	R	L	L	T	V	Y	P	Q	A	K		
UniRef90_UPI000395D7C5				H	E	K	Q	L	I	P	G	L	W	G	K	V			N	V	A	E	C		G	G	E	A	L	A	R	L	L	I	V	Y	P	W	T	Q	
UniRef90_Q6T497	L	T	K	R	D	K	A	T	V	K	A	F	W	D	K	V	A	P	K	V	E	D	I	G	V	Q	A	L	S	R	L	L	V	V	Y	P	Q	T	K		
UniRef90_UPI0004547ECD	F	T	A	D	E	K	A	A	I	T	S	I	W	D	K	V			D	L	E	K	V	I	G	G	E	T	L	S	R	M	M	V	V	Y	P	W	T	Q	
UniRef90_Q8UW95	L	S	A	N	D	K	A	T	V	K	A	L	W	A	K	I	S	P	K	A	E	D	I	G	N	E	A	L	S	S	R	M	L	V	V	Y	P	Q	T	K	
UniRef90_F6YMK0																																									
UniRef90_Q6H1L9	L	S	D	A	D	K	N	N	V	K	E	F	W	E	K	I	L	G	E	N	T	G	V	Y	G	T	E	A	L	E	R	T	F	S	S	F	P	S	T	K	
UniRef90_Q2KPA4	M	S	A	E	E	K	G	I	V	T	S	M	W	G	K	V			N	V	D	D	I	G	A	E	A	L	G	R	L	L	V	V	Y	P	W	T	Q		
UniRef90_P02197	L	S	D	Q	E	W	Q	Q	V	L	T	I	W	G	K	I	A	E	A	D	I	A	G	H	G	H	E	V	L	M	R	L	F	H	D	H	P	Q	T	K	
UniRef90_Q90ZA5	T	L	T	A	E	D	K	A	L	V	V	V	L	W	G	K	I	A	G	H	T	D	A	L	G	G	E	A	L	D	R	L	F	A	C						
UniRef90_P01977	V	L	T	D	A	E	K	K	E	V	T	S	L	W	G	K	A	S	G	H	A	E	E	Y	G	A	E	A	L	E	R	L	F	L	S	F	P	T	T	K	
UniRef90_P01935	V	L	S	P	A	E	D	K	T	N	V	K	A	A	W	K	V	G	A	S	A	G	Z	Y	G	G	E	A	L	E	R	M	F	L	S	F	P	T	T	K	
UniRef90_I1Y927	M	L	T	D	G	D	K	K	L	V	T	Q	L	W	E	K	I	A	T	Q	S	P	E	D	F	G	G	E	A	L	E	R	L	F	I	V	Y	P	Q	T	K
UniRef90_S7Q7N2	L	S	D	G	E	W	Q	L	V	L	N	A	W	G	K	V	E	A	D	I	P	G	Y	G	Q	A	V	L	I	S	L	F	T	G	H	P	E	T	Q		
UniRef90_Q8AYQ1	L	T	E	K	D	K	A	A	V	K	A	L	W	A	K	I	S	K	S	A	D	A	I	G	A	D	A	L	S	R	M	L	L	V	Y	P	Q	T	K		
UniRef90_UPI000328ADE2																																									
UniRef90_P85081	L	S	T	K	D	K	E	T	V	K	D	L	W	G	H	I	S	A	S	A	D	A	I	G	A	D	A	L	G	R	L	L	V	V	Y	P	Q	T	K		
UniRef90_UPI00042BEF40	L	T	K	A	E	K	T	I	I	L	S	M	W	A	K	V	S	T	Q	A	D	A	I	G	T	Q	A	L	E	R	L	F	A	S	Y	P	Q	T	K		
UniRef90_P18987	W	T	A	E	E	K	Q	L	I	T	Q	V	W	G	K	I			D	V	A	Q	I	G	G	E	T	L	A	C											
UniRef90_C0H824	W	T	D	A	E	K	S	T	I	S	A	V	W	G	K	V			D	I	N	E	V	G	P	L	A	L	A	R	V	L	I	V	Y	P	W	T	Q		
UniRef90_P13274	W	T	A	D	E	K	Q	L	I	T	S	L	W	G	K	V			N	V	E	E	C		G	S	E	A	L	A	R	L	L	I	V	Y	P	W	T	Q	
UniRef90_P80270	L	S	D	K	D	K	N	T	V	R	A	L	W	A	K	I	S	K	S	A	D	V	I	G	A	E	A	L	A	R	M	L	T	V	Y	P	Q	T	K		
UniRef90_W5KLY8	L	S	A	K	D	K	S	L	V	K	S	F	W	A	K	V	A	P	K	A	D	A	I	G	H	D	A	L	A	R	M	L	S	V	Y	P	Q	T	K		
UniRef90_G1M478	F	S	P	E	E	K	A	A	I	T	S</																														

QUERY	50	60	70	80
UniRef90_P02104	E K F D R F K H L K T E A E M K A S E D L V K K H G V T V L T A L G A I L K K K G			
UniRef90_P02004	R F F D S F F G N L S S A S D L I M G N S D R V I K A H G K K V V L T A F G N A I K N N L D D			
UniRef90_G3WEX2	T Y F D S H F F G N L S S A S D L I M G N S D R V I K A H G K K V V L T S F G E A I V K N N L D D			
UniRef90_P69891	R F F D S F F G N L S S A S D L I M G N S D R V I K A H G K K V V L T S F G E A I V K N N L D D			
UniRef90_I1Y926	T Y F D S H F F G N L S S A S D L I M G N S D R V I K A H G K K V V L T S F G E A I V K N N L D D			
UniRef90_Q45X18	R F F E H F F G D L S S A S A I I M N N P K V I K A H G E K K V F T S F S F G D G L K N H L D E			
UniRef90_P02052	R F F D S F G D L S S A S A V M S N S T Q V V K A H G K K V V L T S F S F G D G L K N H L D E			
UniRef90_P09904	T Y F S H F D L G H N D L S H G S A Q V R Q T A H G A K K V A D A L L T T K A V V K N H L D E			
UniRef90_P18975	T Y F P H F F D L H H D D L H A G S E Q I R H H G K K V V G A L L G D A V K N H L D E			
UniRef90_B8K130	T Y F P H F F D L H H D D L H A G S E Q I R H H G K K V V G A L L G D A V K N H L D E			
UniRef90_P83134	T Y F P H F F D L H H D D L H A G S E Q I R H H G K K V V G A L L G D A V K N H L D E			
UniRef90_U010003331BBB	R F F D T F G N L S S P C A V M G N P R V I K A H G K K V V L T S F G E A I V K N M D D			
UniRef90_D9I2E7	T Y F P H F F A D D L K H G S A Q V R K A H G K K V V M G A I L T A Q A V N A H L D E			
UniRef90_W5MM10	I Y F T H F F A D D L T P G S A Q V R K A H G K K V V M G A I L T A Q A V N A H L D E			
UniRef90_C1BX42	T Y F S H F F A D D L T P G S A Q V R K A H G K K V V M G A I L T A Q A V N A H L D E			
UniRef90_UPI000273A1C1	T Y F P H F F A D D L H H G S A Q L R K H G S K V I G A I V G D A V K N I L D D			
UniRef90_UPI000332FBA8	T Y F P H F F A D D L H H G S A Q L R K H G S K V I G A I V G D A V K N I L D D			
UniRef90_UPI000350E148	T Y F P H F F A D D L H H G S A Q L R K H G S K V I G A I V G D A V K N I L D D			
UniRef90_F6YMJ4	T Y F P H F F A D D L H H G S A Q L R K H G S K V I G A I V G D A V K N I L D D			
UniRef90_P24291	T Y F P H M A D D L T P G S A D I M A H G K K V V A D A L T L A V G H M D D			
UniRef90_E3TFT0	T Y F S H W S D D V H H G S T Q I R S H G K K V V M L A L G E A V N H L D D			
UniRef90_Q10732	T Y F S H F F A D D L H H G S A Q L R K H G S K V I G A I V G D A V N H L D D			
UniRef90_UPI0002C687E3	R F F D N F G N L S S E S A I M G N P R V I K A H G K K V V L T S F G N A V N K H M D D			
UniRef90_P11748	T Y F S H W P D M S P G S G P V K A H G K K V V M G G V A L A I V T K I I D D			
UniRef90_Q90487	T Y F S H W A D L S P G S A A V K K H G K K V I M G G I A E A V Y H I D D			
UniRef90_P14520	T Y F A S W S D L S P G S A A V K K H G K K V I M G G I A E A V Y H I D D			
UniRef90_UPI00015150AE	T Y F P H L N L S P G S A Q V K A H G K K V A A A L T L A V Y H I D D			
UniRef90_M4AD09	I Y F S Q F K H I E D T E E L E H S P Q L R K H A Q R V M N A L N T L A V E N I D D			
UniRef90_M7B321	T Y F P H F F D L R P D L S G H I R C H G M K V V A A L T G E A V V R Q I L D D			
UniRef90_UPI00045D5A6F	T Y F P H F F A D D L S P G S A Q V K A H G R K V A D A L T H A V G H I D D			
UniRef90_C1FXX6	T Y F P H F F A D D L S P G S A Q V K A H G S K V A A A V T G E A A G S V I D D			
UniRef90_F7GY95	T Y F P H F F A D D L S H G S A Q V R K A H G K K V A D A L T T N A V A H V I D D			
UniRef90_UPI000444024C	T Y F P H F F A D D L M N S R S A Q L R A H G A K V M S A I G D A A K N I L D D			
UniRef90_UPI000395D7C5	R F F A S F G N L S G A T A I V G N P K V Q A H G K K V L T S F G E A V K N L D D			
UniRef90_Q6T497	T Y F A H W K D L S P G S E P V R K H G K K V I M T G V G S A V V S M L D D			
UniRef90_UPI0004547ECD	R F F G H F G D L S S A S A I M N N A Q V K A H G K K V I H A F A D G L K H I D D			
UniRef90_Q8UW95	T Y F S H W T S L S P G S A P V V K H G K K V V A G A I G L A V N H M D D			
UniRef90_F6YMK0	T Y F P H F F A D D L S P G S A Q I K G Q G Q K V I A D A I V I S L A V N H M D D			
UniRef90_Q6H1L9	T Y F A H F F A D D L E L S R G S A Q V R A H G K K V A D A L T L A V N H M D D			
UniRef90_Q2KPA4	R F F D S F G D L S S P A A I M G N P K V K A H G K K V A H S I S D G I K N L D D			
UniRef90_P02197	D R F D K F K G L K T P D Q M K G S E D L K K H G A T V L T Q L G K I L K K Q K G			
UniRef90_Q90ZA5	T Y F S H F F A D D L S P G S A Q V K R H G K K V L N A V T G E A A G H I I D D			
UniRef90_P01977	T Y F S H M D L S K G S A D V V K A H G K K V A D A L T T A A A G H F N			
UniRef90_P01935	T Y F P H F F A D D L S H G S A Z V K A H G K K V A K A L L S B A V Z H I I D D			
UniRef90_I1Y927	T Y F P H F F A D D L Q P G S A Q V K A H G K K V A G A L A E A A N K I I D D			
UniRef90_S7Q7N2	Q K F E K L K N L K S E D E M K A S E D L K K Q G A T V V L T A L G G V L K K K G			
UniRef90_Q8AYQ1	T Y F S H W P D T K A G S E P V L K K H G K K V I M G G V G L A V S K K I D D			
UniRef90_UPI000328ADE2	Q Y F S Q F K H M E E P L E M E R S P Q L R K H A C R V M G A L N T V A V E N L H			
UniRef90_P85081	I Y F L H W P D L S P N S P S V K N H G K K N I M S G I A L A V T K I I D D			
UniRef90_UPI00042BEF40	T Y F P H F F A D D L R P G S A H L R T H G A K V A A A L G D A V T K S I L D D			
UniRef90_P18987	R F F D F G N L S N A A I C G N A K V K A H G K K V L T S F G D A V K N I L D D			
UniRef90_C0H824	R Y F G S F G D V S T P A A I M G N P K V A A H G K K V C G A L D K A V K N M G			
UniRef90_P13274	R F F S T F G N L S N A E A I L H N P H V H A			

QUERY	H	H	E	A	E	L	K	P	90	A	Q	S	H	A	T	K	H	K	I	100	P	L	K	Y	L	E	F	I	110	S	E	A	I	H	V	L	H	S	R	H	P	120	
UniRef90_P02104	N	L	K	S	A	L	S	A	L	L	S	E	L	H	A	Y	N	L	R	V	D	P	V	N	F	K	L	L	S	G	N	V	L	V	I	V	L	A	S	H	F	G	
UniRef90_P02004	N	L	K	S	Q	A	L	S	A	L	L	S	E	L	H	A	Y	N	L	R	V	D	P	V	N	F	K	L	L	S	G	N	V	L	V	I	V	L	A	S	H	F	G
UniRef90_G3WEX2	N	L	K	S	A	L	S	A	L	L	S	E	L	H	A	Y	N	L	R	V	D	P	V	N	F	K	L	L	S	G	N	V	L	V	I	V	L	A	S	H	F	G	
UniRef90_P69891	D	L	K	G	T	F	A	K	L	S	E	L	H	A	Y	N	L	R	V	D	P	V	N	F	K	L	L	S	G	N	V	L	V	I	V	L	A	S	H	F	G		
UniRef90_I1Y926	D	L	K	G	T	F	A	K	L	S	E	L	H	A	Y	N	L	R	V	D	P	V	N	F	K	L	L	S	G	N	V	L	V	I	V	L	A	S	H	F	G		
UniRef90_Q45X18	D	L	K	G	T	F	A	K	L	S	E	L	H	A	Y	N	L	R	V	D	P	V	N	F	K	L	L	S	G	N	V	L	V	I	V	L	A	S	H	F	G		
UniRef90_P02052	N	L	K	G	T	F	A	K	L	S	E	L	H	A	Y	N	L	R	V	D	P	V	N	F	K	L	L	S	G	N	V	L	V	I	V	L	A	S	H	F	G		
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UniRef90_P18975	D	L	P	N	A	L	S	D	L	S	E	L	H	A	Y	N	L	R	V	D	P	V	N	F	K	L	L	S	H	C	L	L	V	T	L	A	A	H	L	P			
UniRef90_B8K130	N	L	A	C	A	L	S	E	L	S	E	L	H	A	Y	N	L	R	V	D	P	V	N	F	K	L	L	S	H	C	L	L	V	T	L	A	A	H	L	P			
UniRef90_P83134	N	L	S	A	T	L	S	E	L	S	E	L	H	A	Y	N	L	R	V	D	P	V	N	F	K	L	L	S	H	C	L	L	V	T	L	A	A	H	L	P			
UniRef90_UPI0003331BBB	H	L	K	E	A	F	A	K	L	S	E	L	H	A	Y	N	L	R	V	D	P	V	N	F	K	L	L	S	H	C	L	L	V	T	L	A	A	H	L	P			
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UniRef90_W5MM10	N	L	S	E	A	L	S	K	L	S	E	L	H	A	Y	N	L	R	V	D	P	V	N	F	K	L	L	S	H	C	L	L	V	T	L	A	A	H	L	P			
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UniRef90_UPI000350E1																																											

QUERY	G	D	F	G	A	D	A	Q	G	A	M	N	K	A	L	E	L	F	R	K	D	I	A	A	K	Y	K	E	L	G	Y	Q	G
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UniRef90_G3WEX2	K	D	F	T	P	E	A	Q	A	A	W	Q	K	L	V	G	V	A	S	A	S	A	L	S	S	R	K	Y					
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UniRef90_P09904	G	D	F	T	P	S	V	H	A	S	L	D	K	F	L	A	S	V	S	T	V	L	T	S	K	Y	R						
UniRef90_P18975	E	E	F	T	P	A	V	H	A	S	L	D	K	F	F	S	A	V	S	T	V	L	T	S	K	Y	R						
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UniRef90_W5MM10	A	D	F	T	P	E	A	H	V	A	W	D	K	F	L	A	N	I	A	L	V	L	A	E	K	Y	R						
UniRef90_C1BX42	N	D	F	T	P	E	L	H	L	S	V	D	K	F	L	Q	Q	I	A	L	A	L	S	E	K	Y	R						
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UniRef90_Q10732	T	L	F	T	P	D	V	H	V																								



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UniRef90\_V5N4H6  
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UniRef90_Q7T1B0	R Y F G S F G N L Y N A	E A I I T G N N S	P K I V A A H G K T V V L	H D A L L T Q A V I K S M D
UniRef90_P07428	T Y F P D F	D F S E R H S K H I L	A S H G K K V L	S D A L L T Q A V I K S M D
UniRef90_C1BYA0	T Y F S H	L D I R P R S R K Q M L	S A H G K K V L	V L A I A E C S K D I L S
UniRef90_C0H805	T Y F S H W A D	L D I R P R S S A P V K	K A H G A V I M G A I	A G N A V G L M D S
UniRef90_I3KU04	T Y F S H	L D I S P N S A P V L	A H G A K K I V L A I	A E G A Q D I L S
UniRef90_M3ZD78	T Y F S H W K D	L D I S P G S A P V V K	H G A T V M A G V	V G D A V K D I L D
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UniRef90_P80271	R Y F A K F G N L Y C S A A I	I L G N K E I A A H G T T I	L H G L D R G A V	K N M D
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UniRef90_V5N4H6	Q Y F S E F R H M E D T Q E	M Q S T N S A Q L Q K K	H A V L V M K A L	N A L V E S V D
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UniRef90_E3TGA8	R Y F G S F G N L Y N A A A I	I L G N P K V A A H G L V V	V R G L E K A A	K N M D
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UniRef90_R0J848	R F F A S F G N L S S	P T A I L L G N	S M V R A H G K K V L	T S F G D A V K N L D
UniRef90_H3D5V1	T Y F S H	L D I S P R S S P H M L	S H G R K I V L A I	A E G A Q D I L S
UniRef90_D3ZPM3	T Y F P H	L D L K P G S S Q V K A	H A A Q V A D A D A L	T L A V A H L L D
UniRef90_W5LAM7	R Y F G N F G N L Y N A A A I	I L G N P K V A A H G A V V L	L H G L D R K A V	K N M D
UniRef90_P83272	R Y F G S F G N L S T S	P A A I M G N P K I A A	H G I K V L H G L	D R G A V K N M D
UniRef90_P02139	R F F A S Y G N L S S	P A A I M G N P K V A A	H G R T V E G G L	M R A I K D M D
UniRef90_R4GDF7	H Y F S Q F K H M E D T Q E	M E M E R S Q Q L R	A H A R R V M G A I	N S V K E N I Y
UniRef90_L7MZW5	R F F P D F G N L S N A		A H G K K V L T A F	G E A V K N L D
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UniRef90_G5BXY5	T Y F P H F	D L H P G S P Q L R	Q A H G R K V A D A L	N K A V E H I D
UniRef90_UPI0003F0E70B	I Y F H H L N L T P G		S K D I K A Q G K K V A D A L	T Q A V D Q L D
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UniRef90_F6KMG8	R Y F A K F G N L Y N A A A I	M G N A D V A K H G S I	L H G L D R A M	K N M D
UniRef90_C8YNP9	V Y F S H W K D	L G P D S P N I A R K	H G Y T V V K G V L	D S V D L I D
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UniRef90_P0C239	R Y F S S F G N L S T P A A I	I A G N P N V A K H G I K V	L H G L D R G A V	K N M D
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UniRef90_H3ARB7	D Y F L F R D I D D F H Q L	K M S K E L Q A H G L R	V M S F I E K S V	A R L D
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UniRef90_P10783	T Y F P	T K D I K E G S S F L	H S H G K K V M G A	L S N A V A H I D
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UniRef90_G5CUP5	R H F A T F G N L S T N A A I	L G N P L V A E H G K T V	M G G L D R A V	K N M D
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UniRef90_A0EZW4	R Y F G N F G N L Y N A E A I	T S N E N V I N H G K V V L	L H G L D R A V	K N M D
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UniRef90_R4GDF7	N E F S	P E V Q R A W A K M K S	L I C T H V T A A Y K E	
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UniRef90_UPI0003F0E70B	G D F S	P V M Q A S V D K F L	S H V T S V M I S K	
UniRef90_Q7ZT85	T E Y S	A S A C L A W D K L L	E Y V S D M L C E K Y R	
UniRef90_F6KMG8	K N F T	P E I Q A T I Q K F M A	V V V S A L G R Q Y	
UniRef90_C8YNP9	D D F T	P Q V H V S V D K Y L	A L I C L A L C E K Y R	
UniRef90_UPI000443AAAE	Q E F T	P Q V Q A A F Q K		
UniRef90_UPI0002BCF73A	E E F T	Q K T Q V P W Q K L T	E A V A N A L A N K Y Q	
UniRef90_H3A6U9	S E F S	P Q I Q A A W E K F M A	L V I D S L S R Q Y	
UniRef90_UPI0002B493D5	K D F T	P D C Q A A W Q K L V	R V V A H A L A R K Y	
UniRef90_G8DP13	K E F T	A E V H V S F D K F L	S C L A W A L S E K Y R	
UniRef90_C1BZ27	P S F D	A D T H E A F Q K F L	R V V V S A L G R Q Y H Q S G	
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UniRef90_H3ARB7	E A W T	P E V E E A W Q I L F	K Y L T A V M K K G Y	
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UniRef90_P10783	P H L T	Y S V H S S V D K F L	A T V G Y V L A S K Y R	
UniRef90_P83113	D D K F	D I A H H Q L D K F L	A A V G G S L T S K Y R	
UniRef90_C8YNP6	D R F T	P S S H A A M D K Y L	S A F S A V P G E K F R	
UniRef90_S4R971	G L S A	E A Q G A W E K L S I	S I L L K S Q Y	
UniRef90_P80946	P E F T	A D V Q E A W Q K F L	M A V T S A L A R Q Y	
UniRef90_G5CUP5	R Q F T	P D V Q E A W Q K F L	A V V V	
UniRef90_UPI00046B0B98	A D F S	A E A H A A		
UniRef90_A0EZW4	L D F T	G D V Q A A F Q K F L	A V V V S	
UniRef90_Q9PVL7	E D F T	P H R Q A S V E K Y L	E A V C D A L S H G Y	
UniRef90_Q9I977	P K L N	A D A Q E A W Q K F L	A V V V A R L A	
UniRef90_UPI0002C62FF6	G A F A	M E M Q A A W D K F L	R G A A V V L T D K Y R	
UniRef90_P02206	S D M T	G P M Q E S F S K V F	T V I C S D L E T L Y K E A N F Q G	
UniRef90_UPI0001CF1E2C	E C F T	P E V Q T S W S K L M A	A L Y W H I T G A Y T E V G W	
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UniRef90_UPI0003AFB808	K E F T	L E F L A A Y P K V V	A G V A N A L T Y K Y	
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UniRef90_G5DZM8	S A F T	P Q V Q A A W E K F S	S G L V A A L S H G	
UniRef90_L5KH54	G D F S	P A L Q A S L D K F L R	H V I L A L A S G Y	
UniRef90_UPI000273DA7A	E E F T	L Q I Q A S W Q E L T	S A V V N A V A H K	
UniRef90_UPI00029D92B9	K E F T	P E V Q A S W Q K M V	T A V A S A L S S R Y	
UniRef90_I3K2H7	E R W T	A E L E E A W K T M F	Q F V T S L M N Q G Y Q E	
UniRef90_Q802A3	S K F T	P E I Q A T F Q K F L	A V V V S A L G R Q Y	
UniRef90_B8LND3	D I W S	P E M K I A W D E A Y T	Q L A E A I K S E M K	
UniRef90_UPI00034F4319	N D F P	P E A Q R A W A K L C	G L I Y S H V T A A Y K E V G W	
UniRef90_K7FZS0	D E Y T	P Q L H V A F D K F M E	A V C N V L T E K Y R	
UniRef90_G1SSI4	N D F P	P E T Q R A W A K L R	G L I Y S H V T A A Y K E A G W	
UniRef90_B3RYV6	E N F T	P E V H E A W S K T F	D M I T A A M K S G M	
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UniRef90_P84216	T F S	P A T H R A I D K F L	E E L V H Q L S S K Y R	
UniRef90_UPI00021A6F7E	K Q Y T	P E V A E A W S K T L	D G V E A K I A A	
UniRef90_UPI0002C64E9A	G D F S	T V L Q A S L D R F L S	H V I S A L	
UniRef90_V5N509	G D F S	A I E H A A T D K Y L	S A Y S A V L A E K F R	
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UniRef90_A6DJX1	D A V T	P E I A N A W G E A Y G	F L A E L L K A K Y K A G G W N G	
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UniRef90_D77PW5	D M W S	P E M K S A W A E A Y D	Q L V A A I K K E M K	
UniRef90_UPI000258F143	K Q F T	P E V A E A W N K T L	D V A F T K I Y Q V Y	
UniRef90_P10785	T D Y T	A Q K Q A A F E K F L	H H V E A A L A T G Y	
UniRef90_M3WAU4	G D F S	P A M H A S L E K F L S	H V I S A L A S S Y	
UniRef90_M1SQT0	L D	A A G Q Q A L R S V M A	V V I A D I D A T Y K E L G F T G	
UniRef90_P02138	K E F T	P E R N A Y F Q K F M D	V I S H S L G R E Y	
UniRef90_U5D5B6	T M W T	V E M K D A W A E A Y T	Q L A F A I K E E M K	
UniRef90_B9A9D4	L D	A A G Q Q G L R N V M S	K V I A D L E A S Y K E L G F T G	
UniRef90_W4XLX6	S D Y N	N D V E K S W L A V L	Q V I V D T M S A	
UniRef90_W4XLX6	S D Y N	N D V E K S W L A V L	Q V I V D T M S A	
UniRef90_W4XLX6	S D Y N	N D V E K S W L A V L	Q V I V D T M S A	
UniRef90_W4XLX6	S D Y N	N D V E K S W L A V L	Q V I V D T M S A	



	1		10		20		30		40																																			
UniRef90_W4XLX6	T	A	E	H	K	R	L	V	Q	K	T	W	T	K	L	S	S	N	P	A	K	H	G	A	T	M	F	S	K	L	V	T	D	Y	P	A	V	G						
UniRef90_W4YI83	T	A	E	H	K	R	M	V	Q	K	T	W	T	K	L	S	S	N	P	A	K	H	G	A	T	M	F	S	K	L	V	T	D	Y	P	A	V	G						
UniRef90_W4YI83	T	A	E	H	K	R	M	V	Q	K	T	W	T	K	L	S	S	N	P	A	K	H	G	A	T	M	F	S	K	L	V	T	D	Y	P	A	V	G						
UniRef90_W4YI83	T	A	E	H	K	R	M	V	Q	K	T	W	T	K	L	S	S	N	P	A	K	H	G	A	T	M	F	S	K	L	V	T	D	Y	P	A	V	G						
UniRef90_M3ZCQ3	L	T	D	A	E	K	A	T	V	N	G	L	W	G	K	V	N	P	V	E	I	G	A	E	S	L	A	S	L	L	L	V	Y	P	W	T	Q							
UniRef90_UPI0003C28C4F	L	L	T	E	A	D	K	K	N	I	R	C	T	W	A	K	L	F	E	N	P	E	E	H	G	K	S	I	V	I	K	L	F	T	D	Y	P	E	T	K				
UniRef90_Q7WUM8	M	L	T	Q	K	T	K	D	I	V	K	A	T	A	P	V	L	A	Q	H	G	Y	A	T	I	Q	H	F	Y	K	R	M	F	Q	A	H	P	E	L	K				
UniRef90_V4CJX8	V	L	S	E	E	E	K	T	L	I	L	N	S	W	G	K	V	K	D	D	I	A	K	V	G	I	F	T	F	G	L	F	E	S	H	P	D	I	K					
UniRef90_M1T4W5							D	F	D	T	V	L	A	S	W	G	K	V	E	S	N	I	S	G	L	G	G	E	V	L	T	R	L	F	T	E	H	P	D	T	Q			
UniRef90_D2HU50	L	T	G	E	E	K	A	A	V	T	G	L	W	S	K	V		N	V	D	E	V	G	G	E	A	L	G	R	L	L	V	V	Y	P	W	T	Q						
UniRef90_G1KTL1							L	S	S	A	Q	Q	L	I	R	A	S	W	G	K	V	S	A	N	P	L	E	H	G	M	V	L	F	S	R	L	F	D	L	N	P	D	L	L
UniRef90_UPI00045E4628	V	L	S	P	A	D	K	S	N	V	K	A	A	W	G	K	V	G	H	A	G	E	Y	G	A	E	A	L	E	R	M	F	L	S	F	P	T	T	K					
UniRef90_P56691	V	L	S	S	Q	N	K	K	A	I	E	E	L	G	N	L	I	K	A	N	A	E	A	W	G	A	D	A	L	A	R	L	F	E	L	H	P	Q	T	K				
UniRef90_G9N8G9	L	T	P	E	Q	I	A	I	V	K	S	T	V	P	L	I	R	E	H	G	K	T	V	T	T	T	F	Y	A	N	M	L	A	A	H	P	E	L	K					
UniRef90_G4WMV8	T	F	T	A	E	E	E	A	L	V	L	K	S	W	A	A	M	K	K	N	A	G	E	L	G	L	K	F	F	L	K	A	F	E	I	A	P	S	A	A				
UniRef90_L8HMOV9																																												
UniRef90_B3CJ17																																												
UniRef90_P07409	W	T	G	E	E	K	A	L	V	N	A	V	W	T	K																													
UniRef90_V3Z7S3	L	T	D	R	Q	K	E	L	V	L	E	S	W	Q	I	V	Q	G	D	L	D	K	V	G	V	D	M	F	M	R	L	F	Q	T	Q	P	D	V	Q					
UniRef90_Q8BYM1																																												
UniRef90_UPI0003C2B1C2	L	S	S	T	E	Q	A	L	I	R	E	S	W	Q	K	V	S	G	N	P	L	Q	H	G	I	L	L	F	T	R	L	F	V	V	H	P	D	T	K					
UniRef90_V4A611	F	T	E	T	Q	I	D	T	I	R	S	T	W	P	L	L	S	R	N	M	V	R	V	G	T	D	V	F	V	R	I	F	T	E	V	P	T	V	K					
UniRef90_W4XUE2	L	T	K	Q	Q	K	A	L	I	K	K	S	W	T	Y	V	L	E	D	K	L	R	I	G	V	I	E	L	K	L	F	K	A	F	P	A	S	Q						
UniRef90_Q90WH9																																												
UniRef90_UPI0002EB71C2	M	L	S	Q	K	T	I	D	I	V	K	S	T	V	P	V	L	E	V	H	G	N	E	I	T	K	A	F	Y	K	N	M	F	E	T	H	P	Q	L	L				
UniRef90_UPI000393ED6D																																												
UniRef90_D1AB44	M	L	S	A	E	S	R	E	A	I	R	S	S	W	K	E	I	Q	E	D	I	S	R	V	G	V	I	M	F	V	R	L	F	E	T	H	P	E	L	K				
UniRef90_UPI0003F0AB64	F	T	D	R	E	T	A	L	I	R	S	T	W	P	L	L	A	S	D	M	T	R	N	G	G	K	I	F	L	Q	I	F	A	V	A	H	P	V	K					
UniRef90_Q4JDG2																																												
UniRef90_P02015	L	S	G	E	D	K	A	N	V	K	A	V	W	D	H	V	K	G	H	E	D	A	F	G	H	E	A	L	G	R	M	F	T	G	I	E	Q	T	H					
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UniRef90_UPI00036D1A60	M	L	S	P	K	S	A	E	T	V	R	A	T	L	P	A	V	S	G	A	I	G	E	T	T	L	F	Y	E	K	L	F	A	A	H	P	E	L	L					
UniRef90_S4XMC7	L	S	A	R	T	I	E	L	V	Q	W	S	W	A	K	V	M	P	I	S	D	A	A	A	S	L	F	Y	E	R	L	F	T	L	D	P	S	V	R					
UniRef90_P80017	L	T	P	A	E	K	D	L	I	R	S	T	W	D	Q	L	M	T	H	R	T	G	F	V	A	D	V	F	I	R	I	F	H	N	D	P	T	A	Q					
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UniRef90_UPI000372CA72	M	L	S	E	Q	S	A	P	V	I	K	E	T	L	P	V	V	G	A	A	I	E	E	I	T	A	L	F	Y	Q	K	L	F	E	A	R	P	E	L	L				
UniRef90_UPI0003F4CB53	M	L	S	S	D	H	A	E	T	V	R	A	T	L	P	A	V	A	A	H	G	V	E	I	T	G	T	F	Y	D	A	M	F	A	A	H	P	E	L	R				
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UniRef90_W5K4Z1	L	T	G	K	D	K	E	L	I	R	S	T	W	G	E	S	L	G	K	N	K	V	P	H	G	I	V	M	F	T	R	L	F	E	L	D	P	S	L	L				
UniRef90_I3N507	L	S	D	G	E	K	N	A	I	S	T	V	W	G	K	V																												
UniRef90_Q1R0E4	M	L	T	S	A	Q	E	S	V	I	A	A	T	T	P	V	V	A	E	H	I	E	A	V	I	G	A	Q	R	F	Y	P	L	M	F	A	R	Y	P	E	V	K		
UniRef90_UPI00042BDA80																																												
UniRef90_G9NNS6	T	L	S	P	A	Q	I	D	I	I	K	S	T	V	P	I	L	R	E	H	G	P	L	V	A	T	T	F	Y	A	N	M	L	A	A	H	P	E	L	Q				
UniRef90_UPI0003C4848F																																												
UniRef90_V9G8F0	M	L	T	E	K	T	I	A	T	I	K	S	T	V	P	V	L	E	Q	H	G	V	T	I	T	S	T	F	Y	R	N	M	F	K	A	H	P	E	L	L				
UniRef90_UPI000441FAB0	W	T	S	E	E	K	S	T	I	S	A	L	W	G	K	V																												
UniRef90_UPI0002486154	L	T	P	E	H	E	A	T	V	T	A	T	L	P	A	I		G	A	N	I	G	E	I	A	R	V	F	Y	A	G	M	F	A	E	H	P	E	L	L				
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UniRef90_R6FQS7	M	L	D	Q	K	T	I	D	I	I	K	S	T	V	P	A	L	K	A	H	G	L	E	I	T	T	T	F	Y	K	N	M	F	A	N	N	P	E	V	K				
UniRef90_UPI00035976AF	V	L	S	A	N	D	K	S	N	V	K	A	A	F	G	K	I	G	G	Q	A	D	E	Y	G	A	E	T	L	E	R	M	F	A	T	Y	P	Q	T	K				
UniRef90_L8EQN1	M	L	S	T	K	S	A	E	T	V	R	A	T	L	P	A	V	G	S	A	I	G	E	T	P	L	F	Y	D	K	M	F	A	A	H	P	E	L	L					
UniRef90_UPI0003F065FF	I	F	T	E	R	Q	R	R	I	V	R	A	T	W	R	P	L	A	N	D	M	T	G	N	G	T	K	V	F	L	H	I	F	E	M	N	P	K	V	K				
UniRef90_M5DQW7	M	L	N	T	H	Q	I	N	I	I	K	T	T	A	P	V	V	G	A	H	A	R	E	I	T	D	Y	F	Y	P	L	M	F	E	R	Y	P	E	V	K				
UniRef90_UPI00029D8B08																																												
UniRef90_M8E6D5	M	L	S	P	Q	T	I	A	I	I	K	S	T	V	P	V	L	E	V	H	G	K	A	I	T	T	R	F	Y	E	M	M	F	A	S	H	P	E	L	L				
UniRef90_I0H8V0	M	L	S	D	K	S	R	P	V	V	A	A	T	L	P	V	V	G	E	H	I	E	E	I	A	N	R	F	Y	A	H	M	F	A	A	H	P	E	F	Q				
UniRef90_I4X1Z4	M	L	S	E	Q																																							

	50	60	70	80
UniRef90_W4YI83	T L L P F G N E G L S Y D Q L L V D P R V R A H G T K V M Q T V G S A V D R L N			
UniRef90_W4YI83	T L L P F F G N E G L S Y D Q L L V D P R V R A H G T K V M Q T V G S A V D R L N			
UniRef90_W4YI83	T L L P F F G N E G L S Y D Q L L V D P R V R A H G T K V M Q T V G S A V D R L N			
UniRef90_W4YI83	T L L P F F G N E G L S Y D Q L L V D P R V R A H G T K V M Q T V G S A V D R L N			
UniRef90_M3ZIC3Q3	R Y F S K F G D L S S V S A I M G N P Q V K A H G K K V I N A F D D G L K H L D			
UniRef90_UPI000328C4F	K Y F S K F T L P T E G N L Q A N P L V R F H G R R V M V A V N Q V V E N L D			
UniRef90_Q7WUM8	N I F N M A H Q E R G E Q Q Q A L A R A V Y A Y A N I F R F D			
UniRef90_V4CXJ8	H A F V S F R G L Q K E L N N S S V L R A H A L R V M T T V D K L F R F D			
UniRef90_M1T4W5	Q L F P S K F T G L S A R G D L A G N A A V A D H G K T V L I K L G E I K A K G			
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UniRef90_G1KTL1	P L F Q Y N K K F S P Q E L S S A P E F L E H I R K V M S V I D A A V G H V D			
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UniRef90_B3CJ17	K L F P K F K G L S S Q S E L A G N A L V A A H G A T V L K K L G E L L R A K G			
UniRef90_P07409	T Y F V K F N G K F H A S D S T V Q T H A G K V V S G T V E K S A Y N H I D			
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UniRef90_Q8BYM1	T Y F P H L D L R P G S S Q V K A H A Q K V A D A L T L A T Q H I D			
UniRef90_UPI00032B1C2	S L F Q Y N C Q F S S P Q E L S S P E F L D H I R K V M L V I D A A V T Q L E			
UniRef90_V4A611	E L F S S F N I L V D V N D L H K M P T F R A H A E M F M Q V L H L V V D N L E			
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UniRef90_W4YI83	D L E S V V P L L Q E E			
UniRef90_W4YI83	D L E S V V P L L Q E E			
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UniRef90_M1T4W5	S S D T I K P	L A T T H A N K H K I G L N N F N L I T E V I T K L F G E K		
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UniRef90_L8HMV9	D L K G A F A S L	S E L H C D K L H S V D P E N F	Q Y I F Q V M E C V L R N V L G	
UniRef90_B3CJ17	D H A A I L H P	M A T T H A N K H K I T L N N F R L I T E V L V E V M K E K A G		
UniRef90_P07409	D V K P H F V E	S K K H Y E E L V D P E N F	Q Y I F Q V M E C V L R N V L G	
UniRef90_V3Z7S3	D L E Q M L S D L	G A R H V M Y N A K V D Y I D L L I G P Q F I W A I Q P V V D		
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UniRef90_UPI0003C2B1C2	N L L C L L C N L	G K K H Q A V G V K M D S F S A V G D S L I Y M L E K C L G		
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UniRef90_P02015	D L E A T L X K L	S D K H A H D L M V D P A E F P R L A E D I L V L G F H L P		
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130 140 150

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

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

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

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

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

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



	1	10	20	30	40																																					
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UniRef90_A2R2Z2	L	T	Q	E	S	T	D	I	I	K	A	T	V	P	V	I	K	E	H	G	N	A	V	T	T	T	F	Y	K	N	M	L	A	A	H	E	P	E	L	L		
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UniRef90_A1CN79	L	T	P	E	Q	I	A	I	I	K	A	T	V	P	V	I	K	D	H	G	E	N	I	T	T	T	V	F	Y	K	N	M	L	T	E	H	P	E	L	L		
UniRef90_UPI000380F77D	M	L	S	E	E	S	A	A	V	V	K	A	T	L	P	V	V	A	A	Q	L	D	T	I	T	T	A	R	F	Y	D	T	M	F	A	D	R	P	E	L	L	
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UniRef90_Q65M00	M	L	S	E	K	T	M	Q	I	V	K	S	T	A	P	I	L	K	E	K	G	T	E	I	T	T	T	F	Y	K	R	M	F	D	A	H	P	E	L	L		
UniRef90_M2APL6	M	T	P	E	Q	V	T	L	V	K	E	S	W	E	K	V	K	P	L	S	E	Q	A	A	E	L	T	T	F	Y	G	R	L	F	T	L	D	P	S	L	R	
UniRef90_H0SA38	M	L	T	A	D	E	I	G	H	V	R	S	S	F	D	M	V	F	A	R	A	T	E	M	T	T	T	T	F	Y	N	R	L	F	T	E	L	A	P	E	L	L
UniRef90_C5DS97	M	L	S	E	Q	D	R	N	I	I	K	A	T	V	P	V	L	E	Q	H	G	A	T	I	T	T	S	L	F	Y	K	N	M	L	E	A	H	E	E	L	L	
UniRef90_UPI00002E4C509	M	L	S	E	Q	T	K	E	I	V	K	A	T	V	P	V	L	E	Q	Y	G	N	E	I	T	T	T	K	V	F	Y	E	R	L	F	E	A	H	P	E	L	L
UniRef90_I0JTK3	L	L	N	D	H	T	I	K	V	I	K	S	T	V	P	V	L	E	E	H	G	E	A	I	T	T	T	H	F	Y	Q	L	F	L	N							

[illegible]

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UniRef90_A1CN79	A	L	G	P	A	V	E	L	I	C	N	K	H	A	S				L	Y	I	Q	P	E	H	Y	N	I	V	V	G	K	F	L	L	E	A	M	G		
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UniRef90_R7TL54	D	L	D	T	V	F	V	N	L	G	K	R	H	I	H	L	K	S	L	E	P	D	F	F	R	V	F	S	G	A	L	M	Y	V	W	R	S	T	I	G	
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UniRef90_M2APL6	T	L	P	E	A	V	L	A	R	I	A	H	K	H	T	A			L	E	V	E	V	P	D	S	S	Y	A	T	V	G	E	A	L	L	E	A	M	G	
UniRef90_H0SA38	Q	M	T	G	L	L	A	S	L	G	R	N	H	A				R	Y	E	G	V	Q	P	A	H	Y	P	I	V	V	G	E	A	L	L	E	A	M	G	
UniRef90_C5DS97	D	I	L	S	V	L	A	P	Y	I	N	L	T	G	H	K	H	Q	I	K	P	E	H	Y	P	I	V	V	G	E	N	L	L	E	A	M	G				
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UniRef90_I0JTK3	A	I	L	P	R	V	K	Q	I	A	E	K	H	R	S			L	N	V	L	P	E	H	Y	P	I	V	V	G	E	N	L	L	E	A	M	G			
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P A F T P A T R A A W S Q L Y G A V V Q A M S R G W D G  
D A F T P A I K D A W A A Y F Q L A D I M A A L Y N E A G W T  
D A V T P E V A E A W T E V Y W L M A D A L  
D T A T A E V L E A W G Q A Y G V I A K I F I D V E K D I  
D R Y T K N I E E I Y K I T F R F I V D A L I D G  
D A C D E V L D A W G A A Y W A L A N I M I D R Y K E S G W T  
D A V T P D V A A W D E V Y W L M A G A L L A R V Y A A A G  
D A A T D E I I G A W G E A Y G V I A Q V F I D I E K E M  
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P D F T A E V R G A W K L F E F M L Q H L A H G Y N Q A  
E A A T E D I L Q A W A E A Y E E I A R V F I E V E K Q M  
D D F T E D V K E A W L L T Y T T L S G A M L S G  
P H W T H E V E Q A W R K V Y D I I A Q R M I A  
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T D F N Q E V R Q A W V D L Y K V I A E V M R S A  
D A A T D E I M D A W E K T Y G V L A  
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D G A T D D I I S A W K K A Y F F L A D I L I E A E K N L  
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D A A T P E I L D A W A A A Y G Q L A E L M I R



[illegible]

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P L F N Q V H Q A R G H Q Q K A L A G A V L A F V V D N L N E N P A  
L H N I F N Q T G Q T T G A Q P R A L A G A V F S Y A S H V K D D L G  
P L F P A D N T D A M K G Q G N K L M T M L A S A V A G L S D L D  
T L F E K F K E L K T K E D Q A N S G L E A E H A S T V M N T L D E G I K E L D  
A Q F D M S A Q A N S G P A K L A T A V V S Y A T K I D N M E  
T Y F S H W K D L S P G S D P V R K H G A T V M A A V T D A V S K I D  
D L F N Q G N Q A D G R Q Q L A L A S A V V G F A E Y L I T E A G  
N V F N Q T H Q K V G E Q P K A L A N A V Y M A A A H I D E L E  
N L F N K T N Q S R G L Q P T A L A T T V L A A A K H I D N L E  
I A D T F N R G N Q K S G E Q Q K A L A S A L A T F A A M L V D N A P  
Q M F P T N M A G Q R D R L V A A L G H V V S H V D Q V D  
P M F K S T D M A E Q G K K L M Q T I G N G L S N L R  
Q L F S F L R N S D V P L E K N P K L K I H A M A V F V M T Y E A A A Q L R  
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N I F N P A N Q R S G G Q A R S L A A S I L A Y A A H I D H L D  
N V F N M R H Q E R G E Q Q Q A L A R A V A Y A A A N I E D P Q  
N M F N Q T N Q K R G F Q S T A L A Q S V L A A A V N I D  
N Y F N M T N Q E I G T Q P L A L A N T V Y L A A A N I E Q L E  
E K F D K F K S L K S E D E M R G S E D L K K H G S T V L T A L G G I L K K K G  
A Y F A H W K D T S P N S E V K K H G A L I L A T I G D V V N R I E  
N M F N Q T N Q K K G F Q S T A L A Q S V L A A A M N I E  
T Y F S H W T D L S P G S A S V K K H G K T V I G G V A D A V A K I D  
H L F N M G N Q N K R Q T A L A M A V L A Y A E H I E  
Q L F P F S D V P P S E F K T N V R F R A H A N S V V Y A L S S I V D A L N  
D V F N R A D Q A L G D Q P Q A L A A S V V A Y A V H L V D P A P  
N F F N Q A H Q A N G D Q P R A L A N G V L M Y A R H I D K L E  
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N I F N Q T H Q I L T G H Q P R A L A N A I Y A A A N I E D M S  
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T Y F S H F D L H E N S A Q I R X X X K V V D A L T Q A V N N L D  
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D G L F S R A N Q R N G E Q Q K A L A G S I A A F A S H L V A N P D  
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P L F N Q A N Q A S G D Q P R A L A N G V L M Y A R H I D E L D  
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N I F N M A H Q I T G H Q P K A L A D A V Y G A A A N I E D F S  
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N M F N Q T N Q K K G M Q S A A L A Q A V L A A A M N I N N L G  
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L C N I F N Q T N Q K R G F Q Q E A L V Y A V Y A A G E N I D K L E  
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T M F D M T K Q Q N G K Q P K A L A M A I L H A A M N I E N L D  
W Q N L F S Y L E S P V I L K I L I Q T G K G A S V Y K I R G L D H L S  
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R V F N K A N Q A I G E Q P K A L A S V V A Y A V N L I D P D A  
R L F A K T D M K N Q E K K L L N S L V L V I E S L R  
G L F P E N M D V Q R D R L L R G L R L I D L V D D V D  
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UniRef90_L5N6T1	T I L P M V K Q V A E K H R S L H V K	P E H Y P I V V G G K H L L L G A I K E V L G		
UniRef90_C5DJ02	A L A P Y V V I G H K H V S L G I V	E D Q Y P I V V G H D N L F A A I V I E V L G		
UniRef90_B1VHK0	D P V D M L S R I L G A D H R K F A V	R A E H Y P A V G E A L L A T L E Q F L G		
UniRef90_D9TD6E	R L V G F L R D L G A D H R K F A V	R A E H Y P A V G E A L L A T L E Q F L G		
UniRef90_UPI000305D9F9	A I V P V V G V K H I D Y G V K	R A E H Y P A V G E A L L A T L E Q F L G		
UniRef90_Q94FT8	K R D T T I K R V L G S T H D F K	N G V S D A E H F E V A K F A L L E T I K E A V L G		
UniRef90_X1XX44	D L D T F F H Q V G A S H R S I P	G F K Q E Y F W R I E E F F L T A V S T T I L G		
UniRef90_UPI00047CF7FA	Q L G M V N R I A H K H V S L E V	V P P E H Y P I V V G G D H L L R A I K A V L G		
UniRef90_UPI0002E7AAEF	S L E A V L K N I A N K H V S L D V	V P P E H Y P I V V G G D H L L R A I K A V L G		
UniRef90_K9AYY9	D L S K I L K E I G Y K H C A	L Q V F P E H Y P I V V G G E Y L L A K I A E Y L G		
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UniRef90_A7U8A9	N M T T V L G S L S D L H A F K R L	R V D P E H Y P I V G H N I M V V I C M T F P		
UniRef90_S2XKA8	D F T P L L P I K E I A Y K H C V	R P E H Y P I V G H N I M V V I C M T F P		
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UniRef90_N6TIP6	D L V Q I L T K T I G S H K H V S	R H I V T A D A F A I L H L K E V T I		
UniRef90_H5UUD9	S F E P V L E R I A H K H V S L G I	T A P Q A Y T I V G H H L L M Q A I I G E V L G		
UniRef90_Q127H5	Q L G L V A Q I I N K H V S L Q I E	P A H Y P I V V G A C H L L R A I K E V L G		
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UniRef90_U3A4C4	A L T A A V E R I A H K H V S F N I	Q A E H Y Q I V V G G H H L L I E T L K R E L A G		
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UniRef90_R7WQA6	G T P P M L S R I A H K H A S L G V	T E A Q Y E I V V G H D C L L F A A I V I E V L G		
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UniRef90_Q4W9X3	A L G P A V E L M C H K H A S L Y I	K P D D Y K I V V G K F L L E A M G Q V L G		
UniRef90_G2KQM6	V L G N A V E L I A Q K H A S L H I	K P E H Y P I V V G E N L L A S I I G E V L G		
UniRef90_C6VYQ3	V L L P V D T I G H K H A S L H I	R P E H Y A I V V G R H L L A S I I G E V L G		
UniRef90_UPI0002FFFA2A	T I L P A A S A L A K R H V N Y G	A R P E H Y P I V V G G A L L W T L E K G L G		</

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UniRef90_E5A9L7	A	L	S	P	A	V	E	L	I	C	H	K	H	A	S	A	T	L	F	I	R	P	S	E	Q	Y	P	I	V	G	E	G	L	L	A	A	I	K	E	V	L	G					
UniRef90_Q7T1A4	T	L	T	E	A	M	S	S	E	L	L	G	R	R	H	V	A	T	Y	G	V	D	D	E	D	Y	K	D	T	V	A	G	A	I	L	W	T	L	M	A	M	Y	F	P			
UniRef90_Q0K2N2	D	I	V	P	A	V	Q	E	L	L	G	R	R	H	V	A	T	Y	G	V	D	D	E	D	Y	K	D	T	V	A	G	A	I	L	W	T	L	M	A	M	Y	F	P				
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UniRef90_U1L5L6	A	L	G	D	A	L	T	E	K	V	L	G	A	R	H	V	A	T	S	K	Y	G	A	L	P	E	H	Y	P	I	V	G	N	T	L	L	K	T	A	F	K	E	Q	V	L	G	
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UniRef90_E9EIN2	R	V	R	E	V	L	A	T	I	V	V	S	K	H	V	S	T	L	F	I	R	P	E	H	Y	P	I	V	G	Q	G	F	L	V	E	A	F	V	Q	I	L	G	G				
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UniRef90_P21199	E	L	D	N	A	I	S	T	I	L	A	R	S	H	V	K	R	N	V	K	P	E	H	Y	P	I	V	G	A	K	E	A	L	L	M	G	T	V	A	E	A	V	G				
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UniRef90_K2HBC4	D	A	V	D	E	V	I	D	A	W	E	L	A	Y	G	E	I	A	S	I	E	D	E	K	Y	K	A	S	A	W	T	G	
UniRef90_E5A9L7	D	A	A	T	P	E	I	L	N	A	W	G	A	A	Y	W	Q	L	A	D	I	M											
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UniRef90_P21199																																	
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UniRef90_X5KG23	R				
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UniRef90_S7X5W1	N	L	F		
UniRef90_K9V3H3	R				
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UniRef90_UPI000374A41B	R				
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UniRef90_UPI0002B46EBE	N	L	F	N	T
UniRef90_J2K0H0	A	M	F	P	A
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UniRef90_G9Y700	E	L	F		
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UniRef90_B0SVE8					
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UniRef90_K9ERN6	P	L	F	A	H
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UniRef90_J9MVP5	N	L	F		
UniRef90_B4WP36	P	L	F	E	H
UniRef90_K7EFP3	T	Y	F	P	H
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UniRef90_Q5TQA4	A	Y	F	D	F
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UniRef90_A4CEG0	H	I	F	N	M
UniRef90_UPI00046F00C3	D	L	F	N	M
UniRef90_Q17154	K	E	F	R	R
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UniRef90_H9JFD7	D	M	F	E	K
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UniRef90_F7VG60	D	P	A	I	S

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UniRef90_D1LX80	N L V K Q L K E R I L G T T H I A	L K V T I A E D Q Y P V I G L L L A A M K D V L G		
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UniRef90_A6VRC9	V L T N A V M R I A H K H H V S	T S F N I Q P S E D Q Y P V I G L L L A A M K D V L G		
UniRef90_H3GBX7	N L G D A V P R M V H K H H V S	L D I R A K H Y P A V G E N L L L R A I K I V L K		
UniRef90_G8WZT4	N L T E Y L S Q L G R G H H V S	R K Y G T R P E H Y P A V G E N L L L R A I K I V L K		
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Y N F T L E L E R C W S R L Y T Y L A N S I  
D G W T P E L A Q T W T A A Y G A V A D L M L S A  
E M W T L E M K A A W E A Y D Q L A A A I K E E M K  
D A I T D A V K E A W F A A Y W V L A F I L M K R E T E L  
D D W T L D T E K A W T L L L D Y M T A T M K E

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

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



1 10 20 30 40

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

[illegible]

lupas\_21  
lupas\_14  
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jpssm

[illegible]

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