

QUERY	1	10	20	30	40																																					
UniRef90_Q604R7	A	F	V	V	T	D	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	C			
UniRef90_UPI0002DBC591	T	F	V	V	T	E	S	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_UPI0000467A82B	T	F	V	V	T	E	S	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_I4WWE6	T	H	V	V	T	E	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_UPI0003B56E36	T	F	V	V	T	E	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_A5F3A9	A	F	V	V	T	D	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	A	D	A	F	H	E	G	P	N	F	L	V	I	N	P	D	E	E			
UniRef90_T0JZY2	T	Y	V	V	T	E	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	N	P	D	E	E			
UniRef90_K0CKW2	T	F	V	V	T	E	N	C	I	R	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	D	P	Q	V	E			
UniRef90_A2SFX0	T	H	V	V	T	D	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_A7HCN4	A	Y	V	V	A	E	P	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_UPI000380CD61	T	F	I	V	G	E	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_A9VXS9	T	Y	V	V	T	E	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_U7GU00	T	F	V	V	T	E	N	C	I	R	K	K	Y	T	D	C	V	E	V	C	P	T	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_C6AZX7	T	Y	V	V	T	D	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_J0UW70	T	H	V	V	T	E	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_D8JW75	T	Y	V	V	T	E	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_UPI00040984EC	T	H	V	V	T	E	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_A6SVW2	T	H	V	V	T	E	S	C	I	L	K	R	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_Y0KG48	T	Y	V	V	T	E	N	C	I	Q	K	K	F	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	N	P	D	E	E			
UniRef90_UPI00028984E4	T	Y	V	V	T	E	N	C	I	Q	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	N	P	D	E	E			
UniRef90_UPI00001DD0868	T	Y	V	V	T	D	A	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	N	P	D	E	E			
UniRef90_S5XMA6	T	Y	V	V	T	E	N	C	I	M	K	K	F	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_R5E918	A	H	V	V	T	E	N	C	I	L	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	D	P	D	E	E			
UniRef90_D6V7T4	T	H	V	V	T	D	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_C8WVCV4	T	Y	V	V	T	D	A	C	I	R	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_Q5FPP3	T	Y	V	V	T	E	N	C	I	R	K	K	F	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	N	P	D	E	E			
UniRef90_A1WQW3	T	H	V	V	T	E	S	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	D	P	D	E	E			
UniRef90_S5RM52	T	H	V	V	T	E	S	C	I	L	K	R	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	D	P	D	E	E			
UniRef90_D5RU84	A	Y	V	V	T	E	N	C	I	R	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_UPI0003691C80	T	F	V	V	T	E	A	C	I	V	R	K	K	Y	T	D	C	V	E	V	C	P	V	E	C	F	Y	E	G	P	N	F	L	V	I	D	P	D	E	E		
UniRef90_I0HR18	T	F	V	V	T	E	S	C	I	R	K	K	Y	T	D	C	V	E	V	C	P	T	D	A	F	R	E	G	P	N	F	L	V	I	A	D	D	E	E			
UniRef90_B8ERF1	T	Y	V	V	T	E	N	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_UPI000365C46D	T	Y	I	V	T	D	K	C	I	N	K	R	H	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_D9QP57	T	Y	I	V	T	D	A	C	I	V	K	K	F	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	A	D	D	E	E			
UniRef90_J5KG13	A	F	V	V	T	E	S	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_UPI00036072E7	T	Y	V	V	T	E	S	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	I	C	F	Y	E	G	P	N	F	L	V	I	D	P	D	D	E	E		
UniRef90_QOKDY5	T	F	V	V	T	D	A	C	I	Q	K	K	R	H	T	D	C	V	E	V	C	P	M	S	C	F	Y	E	G	P	N	F	L	V	I	A	D	D	E	E		
UniRef90_P80448	T	Y	V	V	T	E	N	C	I	R	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	N	P	D	E	E			
UniRef90_B1M9A5	T	Y	V	V	T	E	N	C	I	R	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	N	P	D	E	E			
UniRef90_D5BSR7	T	Y	I	V	T	E	N	C	I	L	N	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	H	P	D	E	E			
UniRef90_T1VUN4	A	Y	V	I	T	A	P	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	N	C	I	H	P	T	P	D	M	L	Y	I	D	P	D	T	S	E		
UniRef90_R7X2Y4	T	H	V	V	T	E	A	C	I	K	K	K	Y	T	D	C	V	E	V	C	P	V	E	C	F	Y	E	G	P	N	F	L	V	I	M	C	D	P	R	S	E	E
UniRef90_UPI00037A60EA	Y	V	V	T	E	S	C	I	Q	K	K	R	Y	T	N	C	A	A	V	C	P	V	D	A	F	R	E	G	P	N	F	L	V	I	D	P	P	M	E	E		
UniRef90_P96093	T	H	V	V	T	E	A	C	I	L	R	K	K	Y	T	D	C	V	T	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	A	D	P	D	E	E	
UniRef90_UPI00004189748	A	F	V	I	T	Q	S	C	I	L	R	K	K	Y	T	D	C	V	T	V	C	P	V	N	C	I	H	P	T	P	D	I	L	V	I	H	D	P	E	A	E	
UniRef90_N6YT66	T	H	V	V	T	E	A	C	I	L	R	K	K	Y	T	D	C	V	S	M	C	P	V	D	A	F	R	E	G	P	N	F	L	V	I	D	P	P	E	E	S	
UniRef90_UPI000361DFE7	A	Y	V	I	T	Q	N	C	I	L	R	K	K	Y	T	D	C	V	S	M	C	P	V	D	C	I	R	P	A	P	E	M	L	Y	I	D	P	D	S	S		
UniRef90_X5KJS6	A	Y	V	I	T	Q	N	C	I	L	R	K	K	Y	T	D	C	V	S	M	C	P	V	D	C	I	R	P	A	P	E	M	L	Y	I	D	P	P	E	S		
UniRef90_L7LQG2	T	H	V	I	T	R	S	C	I	L	R	K	K	Y	T	D	C	V	S	M	C	P	V	D	C	I	R	P	A	P	E	M	L	Y	I	D	P	P	E	S		
UniRef90_UPI000381E505	T	F	A	I	T	Q	T	C	I	L	R	K	K	Y	T	D	C	V	S	M	C	P	V	N	C	I	H	P	T	P	D	M	L	Y	I	D	P	P	Q	A		
UniRef90_A8F048	T	Y	V	V	T	D	E	C	I	V	K	K	Y	T	D	C	V	E	V	C	P	V	D	C	F	Y	E	G	P	N	F	L	V	I	N	P	D	E	E			
UniRef90_H6RU67	A	Y	V	I	G	E	P	C	I	D	V	L	D	R	A	C	L	D	E	C	P	V	D	S	I	Y	E	G	P	N	F	L	V	I	A	D	P	P	E	E		
UniRef90_G7GTZ3	A	F	V	I	T	Q	S	C	I	L	R	K	K	Y	T	D	C	V	S	M	C	P	V	N	C	I	H	P	T	P	D	I	L	V	I	H	D	P	Q	A		
UniRef90_UPI000379F4FE	A	Y	V	I	T	Q	T	C	I	L	R	K	K	Y	T	D	C	V	S	M	C	P	V	N	C	I	H	P	T	P	D	I	L	V	I	H	D	P	Q	A		
UniRef90_UPI00030D85D0	T	Y	V	I	A	A	P	C	I	D	V	M	D	R	G	C	V	E	E	C	P	V	D	C	I	Y	E	G	P	N	F	L	V	I	H	D	P	D	E	E		
UniRef90_UPI0003792B4B	T	F	V	V	T	E	P	C	I	L	Q	K	K	Y	T	D	C	V	E	V	C	P	M	D	C	F	Y	E	G	P	N	F	L	V	I	D	P	D	G			
UniRef90_H0ITJ3	T	H	V	I																																						

QUERY	D	C	A	L	C	E	P	E	E	C	50	P	A	Q	A	I	F	S	E	D	E	L	60	P	E	D	M	Q	E	F	I	Q	L	70	N	A	E	L	A	E	V	W	P	N	80
UniRef90_Q604R7	D	C	T	L	C	E	P	E	E	C		P	A	H	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_UPI0002DBC591	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_UPI000467A82B	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_I4WWE6	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_UPI0003B56E36	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_A5F3A9	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_T0ZJY2	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_K0CKW2	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_A2SFX0	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_A7HCN4	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_UPI000380CD61	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_A9VXS9	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_U7GU00	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_C6AZX7	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_J0UW70	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_D8JW75	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_UPI00040984EC	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_A6SVW2	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_Y0KG48	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_UPI00028984E4	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_UPI0001DD0868	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_S5XMA6	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_R5E918	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_D6V7T4	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_C8WCV4	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_Q5FPP3	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_A1WQW3	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_S5RM52	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
UniRef90_D5RU84	D	C	T	L	C	E	P	E	E	C		P	I	N	A	I	F	S	E	D	E	L		P	E	D	M	Q	E	F	I	Q	L	N	A	E	L	A	E	V	W	P	N		
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UniRef90_C8W6C2			V	D	E	A	D	K	C	I	G	C	G			C	S	E	V	V	C	P	E	Q	A	I	T	M	S	E	M	K	A	N	D	L	D	E	K	I		
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UniRef90_E2MHG1	Y	V	V	G	K	E	C	L	S	C	K	S	T	I	C	V	D	V	C	P	V	D	A	F	R	D	A	D	Y	Q	L	V	I	C	P	D	T	I	I	I		
UniRef90_R5JJS8	S	Y	I	D	P	S	K	C	K	E	C	G	Q	C	A	C	M	N	S	C	P	V	N	A	I	S	V	S	D	G	I	A	V	I	N	E	E	K	I	I		
UniRef90_R7RPY8			V	I	T	S	P	C	I	G	C		T	K	C	L	M	N	C	P	V	E	A	I	R	V	K	N	G	K	A	V	I	Y	N	E	K	I	I			
UniRef90_S5U6P9	A	Y	T	L	S	I	S	C	N	H	C	D	D	P	P	C	V	K	N	C	P	T	T	A	M	H	E	G	D	G	I	V	M	V	I	D	K	D	K	I	V	
UniRef90_F8EYF7	F	M	V	T	N	A	C	Q	G	C	L	A	R	P	C	M	M	N	C	P	K	K	A	V	T	I	V	D	G	H	A	V	I	D	K	D	K	I	V			
UniRef90_D6M7L5	A	Y	I	N	Q	E	L	C	K	E	C	G	M	C	P	C	K	R	S	A	C	P	T	G	A	I	N	S	D	N	K	M	A	M	I	E	K	E	E	I		
UniRef90_R5U4B1	A	H	I	D	K	S	K	C	I	K	C			K	C	K	S	A	C	P	Y	D	A	I	Y	I	D	Q	D	T	H	T		A	A	K	N	I				
UniRef90_A0A059MHW5						E	R	C	I	G	C			S	C	M	Q	A	C	P	Y	D	A	I	Y	I	D	Q	D	T	H	T		A	A	K	N	I				
UniRef90_UPI00036DE1B3	S	F	M	L	P	R	L	C	N	H	C	D	E	P	C	V	P	V	C	P	V	Q	A	F	Q	R	R	D	G	I	V	V	I	D	Q	E	K	I	I			
UniRef90_B0K440	Y	I	A	P	D	K	C	K	G	C	G	I			C	A	K	N	C	P	V	N	A	I	S	K	T	K	E	P	Y	V	I	D	Q	D	K	I	I			
UniRef90_R5Y1D6				I	T	E	K	C	I	G	C	G	I			C	Q	R	V	C	P	V	D	C	I	A	E	K	K	E	Q	R	R	I	D	Y	N	R	I	I		
UniRef90_UPI00016AF897						S	C	L	H	C	D	E	P	P	C	V	P	V	C	P	T	G	A	S	Y	E	E	D	G	L	V	L	V	I	D	Y	D	K	I	I		
UniRef90_R5NC62	A	Y	I	D	H	E	K	C	I	S	C	G	R	C	P	C	E	E	A	C	P	V	K	A	I	S	K	D	E	Y	G	V	H	I	D	P	E	K	I	I		
UniRef90_R5XBJ5			V	T	N	G	C	Q	N	C	L	E	H	P	C	V	E	V	C	P	K	K	A	I	S	I	K	N	G	R	S	F	I	D	Q	E	K	I	V			
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UniRef90_B0TDE6	F	T	V	T	G	A	C	R	G	C	I	T	H	R	C	I	E	A	C	P	V	D	A	I	A	Q	I	N	R	L	A	Y	I	N	Q	Q	K	I	I			
UniRef90_H2C471						P	C	M	Q	C	E	N	P	P	C	T	E	V	C	P	V	G	A	T	F	K	R	P	D	G	I	I	I	D	Y	D	V	I	I			
UniRef90_F6B594	Y	V	V	T	D	A	C	R	N	C	V	A	H	P	C	R	N	S	C	P	K	K	A	I	S	V	I	Q	N	R	A	F	I	D	H	T	V	I	I			
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UniRef90_R6CVL0	S	F	I	D	K	S	K	C	V	K	C	G	R	C	A	C	A	A	A	C	G	V	N	A	I	E	S	D	E	G	R	A	K	I	N	Y	D	K	I	V		
UniRef90_UPI00029AEFE5			I	D	S	D	K	C	F	G	C	T	H			C	M	N	V	C	P	T	A	A	I	R	I	R	D	G	V	A	T	I	R	P	D	W	I	I		
UniRef90_R5IUC3	Y	R	V	T	E	L	C	Q	G	C	L	A	S	C	C	Q	R	V	C	P	K	G	A	V	K	F	V	N	G	K	S	R	I	D	P	Q	K	I	I			
UniRef90_D9PH99	A	Y	V	I	T	E	K	C	L	G	E	R	Y	G	E	C	A	A	V	C	P	V	E	A	I	Y	K	G	Q	N	F	M	V	I	D	P	A	V	I	I		
UniRef90_R5BY26	Y	E	V	S	N	I	C	K	G	C																																



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UniRef90_E4NJE6	D C G A C E V V C	P V E A I H Y E D D L	P A E L R P F A A N A E F C A E L	
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UniRef90_H0EB23	D C G A C V T A C	P V D A I K P H A K R	L D E H E R A F E L I N A A Y H R V	
UniRef90_R6UE19	K C G K C R E I C	P Y D A I C H K E R P	C K A A C G I G A I T S D	
UniRef90_D5MIR8	D C A A C E P E C	P V A A I F E A S Q V	P E Q W Q H F I Q M N A D	
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UniRef90_U2TWJ3	H C G M C E R T C	P Y E A I H H H V R P	C A A A C G M G A I G S D	
UniRef90_G2MRJ2	E C G R C K D V C	P Y N A I S D T L R P	C I R S C A A K A I	
UniRef90_D9W7I3	D C G A C E T A C	P E Q A I A V D R L A K P	R E H R E D N R R F F	
UniRef90_K2G9J6	D C G M C V M Q C	P V A A I V E E F D L T P	E D E Q F L Q K A E Q F F E K	
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UniRef90_F0RS91	S C G R C A M S C	P F G A I V E R S S L I	P V V K M L E R S E H V T A L I A P A	
UniRef90_E2MHG1	E C G V C E P E C	P V D A I I N P E E Y P	G E N H D I V L N S E L S K T S P V	
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UniRef90_K1YKM7	A	F	F	V	P	K	L	C	N	Q	C	E	N	P	P	C	I	V	Q	V	C	P	V	G	A	T	Y	Q	A	D	G	V	V	V	V	D	R	T	W				
UniRef90_C1D7M7	T	Y	M	L	P	R	L	C	N	H	C	E	N	P	P	C	I	P	V	C	P	V	G	A	F	Q	Q	A	D	G	T	V	V	V	D	E	R	G					
UniRef90_D7JGA3		Y	E	I	T	N	L	C	K	G	C	V	A	R	G	C	Y	T	N	C	P	K	N	A	V	H	Q	K	N	G	Q	A	Q	I	D	H	D	A					
UniRef90_R6VEL8			Y	V	T	E	G	C	Q	G	C	L	A	H	P	C	V	E	V	N	C	P	K	K	A	V	T	L	D	N	G	R	S	V	I	D	S	T	E	K			
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UniRef90_M5DXN7				E	D	N	C	V	G	C	G	V					C	V	S	N	C	P	F	D	A	L	K	M	E	N	D	I	A	V	V	D	S	E	K				
UniRef90_F4H9D9	A	Y	Y	L	S	I	S	C	N	H	C	E	N	P	A	C	T	K	V	C	P	T	G	A	M	H	K	N	E	D	G	F	V	I	N	E	E						
UniRef90_R6YSR0		Y	T	I	T	E	D	C	I	S	C	G					A	C	V	E	A	C	P	Q	R	A	I	T	L	G	A	P	S	V	I	H	Q	E					
UniRef90_R7LLC6			I	D	P	A	K	C	K	N	C	G	M	C	A	C	E	N	A	C	P	V	G	A	I	A	K	D	E	N	G	A	K	I	D	F	E	K					
UniRef90_D4MYK4	S	Y	V	V	T	N	N	C	Q	N	C	L	G	K	D	C	I	K	A	C	R	F	G	A	I	E	P	G	H	T	R	S	R	I	D	P	Q	K					
UniRef90_M0BTN4						P	C	Q	H	C	T	D	A	P			C	E	K	V	C	P	T	T	A	T	R	S	R	D	G	I	V	L	T	D	Y	D	V				
UniRef90_UPI000255D6B6		V	S	E	D	L	C	F	G	C	T	H	A	P			C	M	N	V	C	P	V	E	A	I	R	I	E	N	G	K	A	T	I	R	D	N	W				
UniRef90_UPI000381AE97			S	C	L	H	C	E	D	A	P						C	V	T	V	C	P	T	G	A	S	Y	K	R	D	G	I	V	L	V	D	E	S	M				
UniRef90_UPI000364737D			I	D	P	E	K	R	A	C	G						K	C	A	R	V	C	P	V	S	C	I	S	G	R	P	K	V	Y	V	D	Q	A	K				
UniRef90_F4BUX9		Y	V	D	P	V	L	C	K	G	C						C	A	D	V	C	P	V	E	A	I	Y	V	P	Y	Q	A	V	V	D	P	K	A					
UniRef90_W4F1Q1	A	F	V	I	T	E	A	C	Q	D	E	K	A	A	S	C	L	D	V	C	P	V	D	C	I	K	P	V	G	N	Q	Y	L	I	D	P	R						
UniRef90_U2L2E8	A	V	I	D	E	A	K	C	V	K	C	G	L	C	P		C	E	E	A	C	P	V	G	A	I	S	K	D	E	T	G	H	E	I	D	Y	D					
UniRef90_D7GQG4	A	H	I	D	P	S	V	C	K	E	C	G	L	R	P		C	R	R	A	C	P	V	D	A	I	T	M	D	P	G	I	C	Q	I	D	E	S	R				
UniRef90_R5FYV1	A	E	I	D	H	D	C	I	S	C	G	R	C	P			C	E	A	S	C	P	V	G	A	I	K	K	D	E	H	G	I	H	I	D	E	S	R				
UniRef90_H9BWS4			V	P	T	S	C	R	G	C	E	H	P	H			C	M	T	D	C	P	S	D	S	I	H	R	A	P	N	G	E	V	Y	I	D	D	T				
UniRef90_G9YQ53			V	T	E	G	C	L	A	H	P	C					C	E	E	V	C	P	K	D	A	I	K	L	D	N	G	R	S	H	I	D	G	K					
UniRef90_W0SF06						S	C	M	H	C	G	D	P	S			C	V	S	A	C	P	V	S	A	M	T	K	D	P	V	T	G	V	V	N	A	D	K				
UniRef90_C8VXD8			V	L	E	D	Q	C	I	A	C	G	I				C	A	K	A	C	P	V	D	A	I	S	G	E	R	K	K	Y	K	I	D	E	K					
UniRef90_K6BWE5	T	F	F	T	S	I	S	C	N	H	C	E	H	P	K		C	V	E	N	C	P	T	Q	A	M	H	E	E	D	G	V	V	V	D	H	D	K					
UniRef90_M5U321		F	L	V	A	S	S	C	R	S	C	M	D	P	Y		C	L	V	G	C	P	V	D	A	I	H	R	N	G	D	S	L	E	I	I	E	D	Y				
UniRef90_R6J5J7			V	D	R	E	K	C	I	G	C	C	E				S	C	I	A	V	C	P	V	G	A	L	N	M	V	D	G	K	A	N	I	D	Q	D				
UniRef90_E6PPK8						C	N	H	C	E	R	P	S				C	I	E	V	C	P	P	A	G	A	T	W	Q	R	K	D	G	I	V	I	D	Y	D				
UniRef90_R6QC85	A	Y	I	D	K	S	K	C	K	K	C	G	Q	C	P		C	K	V	T	C	P	V	D	A	V	Q	I	D	E	D	L	A	M	I	D	E	A	K				
UniRef90_V4QS96			S	D	V	C	K	H	C	S	N	A	P	C			C	L	E	A	C	P	T	G	A	I	F	R	T	E	D	T	V	V	V	Q	Q	D					
UniRef90_HOQY53																																											
UniRef90_C3W9A3	T	Y	V	I	T	D	A	C	R	G	C						T	A	C	T	R	V	C	A	V	K	A	I	E	G	N	K	E	K	H	F	I	D	P	E	K		
UniRef90_F2JSX9						N	C	N	K	C							Y	A	C	T	R	A	C	P	V	N	A	I	Q	V	Q	A	E	Q	A	K	I	V	K	E	R		
UniRef90_Z2ERD7	A	Y	Y	L	S	I	S	C	N	H	C	T	N	P	A		C	T	K	V	C	P	S	G	A	M	H	E	E	D	G	F	V	V	V	D	E	S	R				
UniRef90_L9VQ56						P	C	Q	H	C	T	D	A	P			C	E	K	V	C	P	T	T	A	T	R	D	S	D	G	L	V	L	T	D	Y	D	V				
UniRef90_A9KM07			V	N	K	E	K	C	I	A	C	G	L				C	I	N	D	C	P	A	R	C	I	T	W	K	D	N	K	A	F	V	V	N	K					
UniRef90_A4YD10						S	C	N	H	C	D	N	P	V	C			C	M	K	S	C	P	A	V	A	I	S	K	N	E	M	G	I	V	I	D	S	N	K			
UniRef90_R5V6M2	S	Y	T	V	T	E	N	C	Q	N	C	M	G	K	A		C	I	N	A	C	K	F	G	A	I	E	A	G	R	H	R	S	H	I	D	P	Q	K				
UniRef90_W1BBD4	A	Y	Y	L	S	I	A	C	N	H	C	E	D	P	A		C	T	K	V	C	P	S	G	A	M	H	K	R	E	D	G	V	V	V	N	E	E					
UniRef90_H2JHD4						N	C	N	K	C							Y	K	C	I	R	S	C	P	V	N	A	I	A	F	K	N	D	Q	A	E	I	I	H	D	E		
UniRef90_UPI00016C429A	F	L	V	A	T	S	C	R	S	C	Q	K	P	Y	C		C	M	E	G	C	P	V	D	A	I	H	R	R	G	A	H	L	V	V	I	E	N	H				
UniRef90_G2L120						C	L	H	C	K	D	P	E	C				L	T	G	C	P	T	G	A	I	R	F	E	G	G	Q	V	D	I	L	P	S	L				
UniRef90_F3ZWS0			I	I	E	E	N	C	T	G	C						A	V	C	V	R	A	C	P	F	G	A	I	K	M	E	N	D	K	A	V	I	L	D	N			
UniRef90_R7MEM4			V	T	D	L	C	Q	G	C	V	A	R	P			C	E	S	A	C	R	L	K	A	I	S	V	H	D	G	K	S	H	I	D	P	E	K				
UniRef90_A1S9P9						S	C	L	H	C	E	A	A	P	C			V	R	V	C	P	T	G	A	I	D	K	E	T	G	I	V	A	V	N	S	D	R				
UniRef90_H8KR70						C	L	H	C	D	D	P	C					V	K	V	C	P	V	D	A	T	F	K	R	Q	D	G	I	V	I	D	A	E	R				
UniRef90_I0I8L0	T	H	V	I	F	D	P	C	I	R							C	A	E	V	C	P	V	E	C	I	V	P	G	W	P	W	Y	Y	I	D	P	D	T				
UniRef90_F3Z0A3						C	N	H	C	E	Y	P						C	V	R	V	C	P	T	K	A	F	Q	R	A	D	G	I	V	L	M	D	F	H	R			
UniRef90_X1AYH8	A	E	V	E	E	D	L	C	V	G	C							C	V	E	K	C	P	M	E	A	I	D	L	V	E	D	I	A	V	I	N	S	R				
UniRef90_D5V353		Y	S	L	S	I	A	C	M	H	C	T	D	A	P		C	E	K	V	C	P	V	D	C	F	Y	I	R	E	D	G	I	V	L	D	K	H	K				
UniRef90_S5Z7T3		Y	I	D	Q	E	K	C	I	K	C	G	I					C	V	D	S	C	P	A	I	V	R	E	G	D	R	I	V	I	P	E	L						
UniRef90_UPI00035D21B5						S	C	L	H	C	E	T	P	A			C	V	T	V	C	P	T	G	A	S	Y	K	R	D	G	I	V	L	V	D	E	D	K				
UniRef90_Q2FSV1	A	V	I	D	T	K	S	C	I	G	C	G	I				C	A	E	A	C	V	Y	D	A	I	Q	K	V	G	E	I	Y	E	V	V	P</						

		50	60	70	80																																					
UniRef90_Q7LX28	G	C	G	A	C	L	Q	A	C	P	Y	G	A	R	F	F	N	P	V	K	G	V	V	D	K	C	T	F	C	S	H	R	I	L	Y	Q	G	K	L	P	A	
UniRef90_R0HKB0	Y	C	G	K	C	M	N	A	C	P	F	G	A	R	F	F	E	I	S	Q	A	F	D	V	A	L	Q	H	I	R	K	G	E	K	M	V	A	I	I	A	P	S
UniRef90_K1YKM7	G	C	G	Y	C	I	M	A	C	P	Y	G	A	R	F	F	H	P	T	A	V	K	V	A	E	K	C	N	F	C	Y	H	R	I	T	H	G	K	Q	P	A	
UniRef90_C1D7M7	G	C	A	Y	C	V	Q	A	C	P	Y	D	A	R	F	I	N	H	D	T	G	K	A	D	K	C	T	F	C	A	H	R	I	L	A	V	G	L	L	P	A	
UniRef90_D7JGA3	S	C	G	C	I	H	Q	S	C	P	Y	H	A	I	V	Y	I	P	V	P	C	E	S	C	P	V	K	A	I	S	K	D	E	F								
UniRef90_R6VEL8	K	C	G	K	C	A	E	V	C	S	Y	N	A	I	I	I	Q	E	R	P	C	A	K	A	C	G	M	D	A	I	G	S	D	E	N	G	K	A	E	I		
UniRef90_R5VC76	S	C	G	L	C	Q	K	V	C	P	Y	H	A	I	V	Y	T	P	V	P	C	Q	D	A	C	P	V	K	A	I	D	K	D									
UniRef90_A9G317	C	C	G	A	C	E	N	K	C	P	V	G	A	I	F	D	E	D	E	L	P	A	E	W	Q	R	Y	R	E	I	N	A	R	F	F	D						
UniRef90_D3DK33	G	C	K	L	C	S	W	S	C	P	Y	G	C	R	E	F	D	E	A	D	K	V	M	K	K	C	T	L	C	I	L	D	R	I	Y	D	E	T	L	P	P	
UniRef90_M5DXN7	M	C	G	L	C	V	K	E	C	K	F	D	A	M	E	I	E	K	E	N																						
UniRef90_F4HDN9	G	C	R	Y	C	H	M	A	C	P	Y	D	A	Q	Y	D	A	K	K	G	H	M	T	K	C	D	G	C	Y	S	R	I	K	A	G	Q	K	P				
UniRef90_R6YSR0	H	C	G	N	C	V	E	H	C	P	V	A	A	V	I	P	R	E	Q																							
UniRef90_R7LLC6	S	C	G	K	C	V	S	A	C	P	F	G	A	V	H	E	K	S	Q	I	I	D	V	L	K	N	I	K	A	G	K	K	V	I	A	M	V	A	P	A		
UniRef90_D4MYK4	E	C	G	M	C	A	K	A	C	P	Y	N	A	I	A	H	V	S	R	P	C	K	D	S	C	P	V	D	A	I	S	Y	D	E	Y	G	V					
UniRef90_M0BTN4	G	C	R	Y	C	Q	V	A	C	P	Y	G	V	N	Y	F	Q	W	D	E	P	D	V	S	Q	D	A	I	E	Q	H	S	E	M	T	G	D	H				
UniRef90_UPI000255D6B6	D	C	G	E	C	M	R	V	C	P	V	N	A	I	Y	V	E	Q	D	D	F	N	Q	I	F	R	F	K	C													
UniRef90_UPI000381AE97	G	C	S	L	C	A	W	A	C	P	Y	G	A	R	E	M	D	P	V	E	N	V	M	K	K	C	T	L	C	V	D	R	I	Y	N	D	N	I	P	E		
UniRef90_UPI000364737D	K	C	G	S	C	F	E	A	C	P	F	D	A	I	V	I	K	W	R																							
UniRef90_F4BUX9	G	C	G	R	C	V	E	S	C	P	T	Q	A	V	K	L</																										



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UniRef90\_Q7LX28  
UniRef90\_R0HKB0  
UniRef90\_K1YKM7  
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I  
D S E K  
E H R K  
I M G Q I P C T P  
I H D Y R D R P V D S R S P R G V M S K  
I D R  
A P S I A A Q F K S A P G Q I E  
I L A Q Y D A P  
V  
I E G Q  
P P R K S P P I P D K E  
F A A I F D  
F I S A F D  
F A E Q K D G V I D S A A F  
P A C V Q A C P A Q A R F F G D V K D P Q S E I S K  
I  
C V E T C P A N A D I D D P N S E V A K I  
R E G H N S P M G N A R K  
P T G S I D H W R T V S K K A A Y  
I E G Q F G P

	1	10	20	30	40																																					
UniRef90_L0E9W0	A	W	V	I	T	P	P	C	E	G	E	K	L	A	K	C	V	A	V	C	P	E	N	A	I	S	E	E	A	G	Q	Y	Y	I	N	P	Y	K	C	T		
UniRef90_G8LZR3	Y	I	I	A	E	L	C	K	S	G	G	I	A	K	C	C	A	R	Q	A	C	P	V	K	A	I	S	D	K	E	K	K	V	Y	I	N	D	Q	E	Y	I	L
UniRef90_C0GHY3			V	L	E	G	C	T	G	C	G			K	C	C	V	R	Q	A	C	P	V	K	A	I	S	D	K	E	K	K	V	Y	I	N	D	Q	E	Y	I	L
UniRef90_C8WLF7	Y	Y	L	P	V	Q	C	Q	H	C	A	D	P	E	C	C	V	E	K	V	C	P	T	G	A	S	H	D	E	G	T	V	Q	I	D	K	A	K	C	T		
UniRef90_UPI0003B434B7	A	Y	I	N	Q	E	L	C	R	E	C	N	M	C	P	C	K	R	V	C	P	T	G	A	I	T	N	I	E	D	R	R	A	M	I	K	D	E	E	T	C	N
UniRef90_R9CFN4						K	I	G	C	G			A	C	C	V	M	E	C	C	P	T	G	A	I	T	N	I	E	D	R	R	A	M	I	K	D	E	E	T	C	N
UniRef90_I4D7T6						K	I	G	C	G			A	C	C	V	M	E	C	C	P	T	G	A	I	T	N	I	E	D	R	R	A	M	I	K	D	E	E	T	C	N
UniRef90_F6KC8	F	I	D	Q	E	K	C	R	G	C	G	L		Y	R	C	V	R	Y	C	P	V	K	A	I	S	G	E	K	K	Q	H	I	D	L	V	K	C	I			
UniRef90_F7Q0G8	T	I	M	I	S	D	A	K	C	D	C			Y	R	C	V	R	Y	C	P	V	K	A	I	S	G	E	K	K	Q	H	I	D	L	V	K	C	I			
UniRef90_D9QZ52	H	V	T	E	E	T	C	I	G	C			H	A	C	E	K	N	C	A	S	D	A	I	S	Y	F	Q	N	K	K	A	G	I	D	H	N	L	C	V		
UniRef90_UPI0004787D6A			V	N	E	D	R	C	I	G	C			R	R	C	A	K	E	C	A	S	D	A	I	S	Y	F	Q	N	K	K	A	G	I	D	H	N	L	C	V	
UniRef90_D5V2G2			V	P	N	I	C	R	Q	C			D	D	A	P	C	A	N	V	C	P	V	G	A	L	E	F	G	K	D	S	I	L	V	H	E	E	L	C	K	
UniRef90_A9QP26						R	C	N	H	C			E	E	D	S	P	C	V	T	T	I	C	P	T	T	A	F	T	R	E	D	G	I	V	D	F	D	D	D	R	I
UniRef90_I1X523							C	Q	H	C			E	E	D	S	P	C	V	T	T	I	C	P	T	T	A	F	T	R	E	D	G	I	V	D	F	D	D	D	R	I
UniRef90_A0A023X5U6							C	N	H	C			E	E	D	S	P	C	V	T	T	I	C	P	T	T	A	F	T	R	E	D	G	I	V	D	F	D	D	D	R	I
UniRef90_UPI00040D8FF0	A	Y	T	L	S	L	S	C	N	H	C		A	D	P	I	C	V	K	N	C	P	T	T	A	M	H	K	G	D	G	I	V	R	N	T	D	K	C	N		
UniRef90_K2DU94						T	K	R	C	F	S			A	D	P	I	C	V	K	N	C	P	T	T	A	M	H	K	G	D	G	I	V	R	N	T	D	K	C	N	
UniRef90_Z7MSW6			I	D	P	E	I	C	I	R	C			T	C	C	E	E	T	C	P	I	D	A	I	T	H	D	S	R	N	Y	V	V	D	A	D	I	C	N		

	50	60	70	80
UniRef90_L0E9W0	D C G L C D L T C	P V A A I F P A A A V P K Q W R H S I E E N R L F F E		
UniRef90_G8LZR3	K C G V C M E K T	P F K A I F		
UniRef90_C0GHY3	G C G V C T V Q C	P T K A I L V L K K R K Q K V L H P E N T F E R V L L Q S L E		
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UniRef90_UPI0003B434B7	G C G A C I S P C	P T G S I D N W R S V I K A E A Y S L I D A Q		
UniRef90_R9CFN4	N C G S C M N A C	P F G A I S D K S L I V P I A K R L G R K R K M Y A V V A P A		
UniRef90_I4D7T6	D L G S C V K V C	P T N A L S L S I P Q E P K T E I A S E A G S K F		
UniRef90_F6CKC8	K C G T C M E K C	K F G A V Y		
UniRef90_F7Q0G8	L C G N C V K T C	Q N A K S A H S Q F D Q F L N F L K E G K R V V V S I A P S		
UniRef90_D9QZ52	G C G R C I G V C	P V D A V E T D F D E S N D I L N C K I A E Y T K		
UniRef90_UPI0004787D6A	G C G R C I G A C	G F D A I S N K N D D A P A L L G M R M A E Y A A		
UniRef90_D5V2G2	G C K M C T L V C	P F G A I R P E A E L M S V D Y		
UniRef90_A9QP26	G C K S C M Q A C	P Y D A L Y I D P N K G T A A K C N Y C A H R		
UniRef90_I1X523	G C R Y C M M A C	P Y K A R S F V H E K L Q D Q M Y		
UniRef90_A0A023X5U6	G C G Y C V I A C	P Y G V I T N V I P E D G R A F K C T L C Y D R Q I D G L E P A		
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UniRef90_K2DU94	G C G K C F K A C	P C G A I I M T D R		
UniRef90_Z7MSW6	G C M A C V P P C	P T G A I D S W R		
UniRef90_S0G7L0	G C A E C I V R C	P T G S I N I N W N Q T I P V F M E K M V E Y		
UniRef90_J3CPD2	G C G Y C S Y A C	P F G A P Q F		
UniRef90_UPI000255DEAD	D C G A C E P V C	P V E A I Y D K D D I P E E W A D Y Y K A D V A F F D D L		
UniRef90_Q1Z510	G C R Y C E M R C	P Y G A P Q Y D A E K K V M S K C D G C Y E R V A E G K K P V		
UniRef90_F6CHK4	G C R S C I M A C	P W G A P Q W D E E K G V A V K C D Y C K D R I D A G L E P A		
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UniRef90_D2TY45	G C K S C I I A C	P F G A I D M V P		
UniRef90_A3QAI1	G C M Y C V A A C	P Y K V R F I N P E T K A A D K C N F C K D T R L A R		
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UniRef90_B5YDM7	K C G Q C F V C	P F K V I K K E		
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UniRef90_K1S1J7	Q C G Q C I H A C	P F G A I G S K T D I V D V I K A I V D G K K V V A M V A P A		
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UniRef90_E1QNT1	G C S V C A Q V C	P Y N A I K P E G N V K D W L K K W A E		
UniRef90_R6VU03	S C G A C V Y Q C	P F G A		
UniRef90_E1R7R9	K C G E C Y K A C	K F D A V Y		
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UniRef90_UPI00035E0AD1	G C K Y C L T A C	P Y D A R F I N S E T G A A D K C T F C F D E R V A R G L K P		
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UniRef90_A1KA19	I	D	P	E	I	C	I	R	C	N	G	T	C	E	E	I	C	P	N	G	A	I	T	H	D	N	L	N	Y	V	V	K	F	D	V	N				
UniRef90_B7KG88	Y	T	I	P	D	N	C	Y	S	I	G	T	C	K	P	Q	C	P	T	G	A	I	H	L	D	D	G	K	Y	W	I	E	S	G	L	N				
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UniRef90_C9RHG7	Y	I	I	P	I	I	Q	H	C	A	S	A	P	C	K	E	V	C	P	V	S	A	I	E	H	K	D	G	Y	V	Y	L	N	E	D	I	I			
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UniRef90_Q1MSH6	I	D	G	E	K	C	R	R	G	G	L			C	V	K	V	C	P	V	K	A	I	S	G	E	I	R	K	F	A	I	D	A	K	L	I			
UniRef90_E5YAL2														C	R	C	L	E	S	C	P	E	G	A	I	S	R	G	A	Y	R	Y	V	S	D	P	D	R	C	E
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UniRef90_I4COR2																																								
UniRef90_D6U334	Y	V	I	T	Q	L	Y	I	G	S	K	D	A	C	V	E	V	C	L	V	D	C	I	H	P	T	P	D	H	L	S	I	N	P	D	E	C	I		
UniRef90_R4KJF2	Y	I	I	P	V	L	C	N	H	C	L	D	A	P	C	V	E	V	C	P	T	G	A	T	Y	K	R	E	N	G	I	V	V	D	Y	T	K	I	I	
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UniRef90_C0D6P8																																								
UniRef90_G4Q450																																								
UniRef90_D7E6W5	V	N	D	N	C	N	G	H	C	G																														
UniRef90_W1GA96																																								
UniRef90_X2MD82																																								
UniRef90_U211A5	A	Y	V	I	P	V	L	C	M	H	C	D	D	A	P	C	A	S	V	C	P	N	G	A	I	S	R	G	A	Y	R	Y	V	S	D	P	D	R	C	E
UniRef90_A1WUZO	A	F	I	D	E	S	Q	C	I	G	G	T	C	E	E	I	C	P	N	G	A	I	T	H	D	N	L	N	Y	V	V	K	F	D	V	N				
UniRef90_T0LG33	Y	Y	V	K	K	Q	C	H	C	G																														
UniRef90_H3ZQQ4	A	V	I	D	Y	D	K	C	N	K	C	G	H	F	L	C	E	R	V	C	P	V	N	A	I	I	I	D	E	D	K	P	I	L	Q	E	A	S	T	
UniRef90_G8NTL1	T	Y	P	N	T	D	R	C	N	H	C	L	S	A	E	C	I	K	G	C	P	V	D	A	Y	T	K	D	S	G	I	V	L	H	S	A	D	A	I	
UniRef90_B8CRZ8	A	Y	M	S	I	G	C	N	H	C	G																													
UniRef90_R5PRZ9	Y	F	L	P	S	I	Q	C	C	S	D	A	P	C	V	K	V	C	P	T	G	A	T	Y	R	T	D	D	Q	I	L	V	N	K	E	K	I	I		
UniRef90_F7NDZ6	A	Y	W	L	S	M	S	C	N	H	C	A	E	P	A	C	V	K	Q	C	P	T	G	A	M	Q	K	D	D	G	I	V	C	I	E	P	T	K	I	
UniRef90_F9Z8P8																																								
UniRef90_Q0AV57	S	Y	I	I	T	D	E	C	I	D	C	G	I																											
UniRef90_R5XQ25	V	N	G	D	L	C	I	K	C	G																														
UniRef90_UPI00046AB4F2	A	E	V	N	S	E	V	C	V	G	K	V																												
UniRef90_X118W7																																								
UniRef90_M0AXZ6																																								
UniRef90_R6PCS0	A	Y	V	I	T	D	E	C	N	H	C	S	E	P	A	C	I	P	V	C	P	V	K	A	I	S	K	E	D	G	A	V	R	V	D	S	S	K	I	
UniRef90_R5E4W1																																								
UniRef90_L1LQN0	F	R	V	T	E	A	C	R	G	C	I	Q	H	R	C	M	E	V	C	S	A	K	A	M	V	R	I	N	G	K	S	Y	I	A	S	D	Q	N	K	R
UniRef90_A8FXF6	A	Y	T	S	I	G	C	N	H	C	G																													
UniRef90_E9SAN3	V	R	P	D	K	C	V	G	N																															
UniRef90_C6J5D8	T	Y	T	I	P	E	K	C	R	G	C	T	L																											
UniRef90_R7GMQ2	Y	T	I	T	D	C	I	H	C	G																														
UniRef90_E4PMI0	I	D	S	D	K	C	T	L	C	G																														
UniRef90_U2BLR9	A	Y	V	I	S	D	A	C	V	S	C	G																												
UniRef90_R6P4E5																																								
UniRef90_W8T6R6	Y	I	L	E	E	K	C	T	G	C	N																													
UniRef90_UPI0003B77EE7																																								
UniRef90_R9BSP3	V	D	K	E	K	C	I	G	C	G	S	L																												
UniRef90_D9QUU7	V	I	P	E	E	C	I	G	C	G																														
UniRef90_N9VUA3	F	S	I	T	D	A	C	I	G	C	G																													
UniRef90_C7ML96																																								
UniRef90_F7UUA0	V	S	I	S	C	Q	M	C	E	N	P	S																												
UniRef90_B5YGI2	I	N	I	E	K	C	T	G	C	G																														
UniRef90_UPI0003B6B679																																								
UniRef90_UPI0003A01FE2																																								
UniRef90_C6LI31	A	Y	V	I	S	D	E	C	V	S	C	G	T	C	R	C	L	E	S	C	P	E	E	A	I	T	R	K	E	N	A	Y	V	S	D	P	E	R	C	I
UniRef90_D2RTN4																																								
UniRef90_D1B9H5	E	S	A	C	K	G	C	V	N																															
UniRef90_L0JY48																																								
UniRef90_R6RBR9	H	V	D	Q	E	K	C	I	G	C	G																													
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UniRef90_L0AD29	V	S	M	S	C	M	H	C	H	D	S	P																												
UniRef90_S3JQD9	V	D	E	E	L	C	I	G	C	G																														
UniRef90_UPI00030C5421	H	V	I	P	E	I	L	I	R	O	N	T	C	E	A	I	C	P	V	G	A	I	T	H	D	S	L	N	Y	V	V	K	A	D	I	I	N			

				50		60		70		80																															
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UniRef90_A1KA19	G	C	L	A	C	I	S	P	C	P	T	G	A	I	D	S	W	R	N	V	E	K	A	V	P	Y	T	L	E												
UniRef90_B7KG88	D	C	N	Q	C	V	V	H	C	P	I	S	S	P	V	P																									
UniRef90_UPI000369183C	G	C	R	L	C	V	V	D	P	C	P	V	T	C	I	S	I	D	P	A	E	M	P	P	N	N	E		S	S	L	W	P	G							
UniRef90_C9RHG7	G	C	G	L	C	A	L	A	C	P	P	F	G	A	I	S	M	E	D	K	A	Y	K	C	I	L	C	N	G	E	E	P	A								
UniRef90_D4W8J6	K	C	G	A	C	M	A	T	C	P	P	K	I																												
UniRef90_Q1MSH6	A	C	G	A	C	A	Q	K	C	P	V	H	V	I	A	Q	E	G	E																						
UniRef90_E5YAL2	G	C	G	I	C	S	G	V	C	P	C	G	I	W	T	M	H	P	N																						
UniRef90_A1RYW6	G	L	G	T	C	A	F	V	C	P	A	G	A	I	G	F	A	E	E																						
UniRef90_I4COR2	E	C	E	G	A	C	L	K	V	C	P	D	G	A	L	F	P	E	D																						
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UniRef90_R4KJF2	G	C	K	A	C	V	V	A	C	P	Y	N	N	R	T	L	M	P	K	G	K	L	K	E	G	H	F	K													
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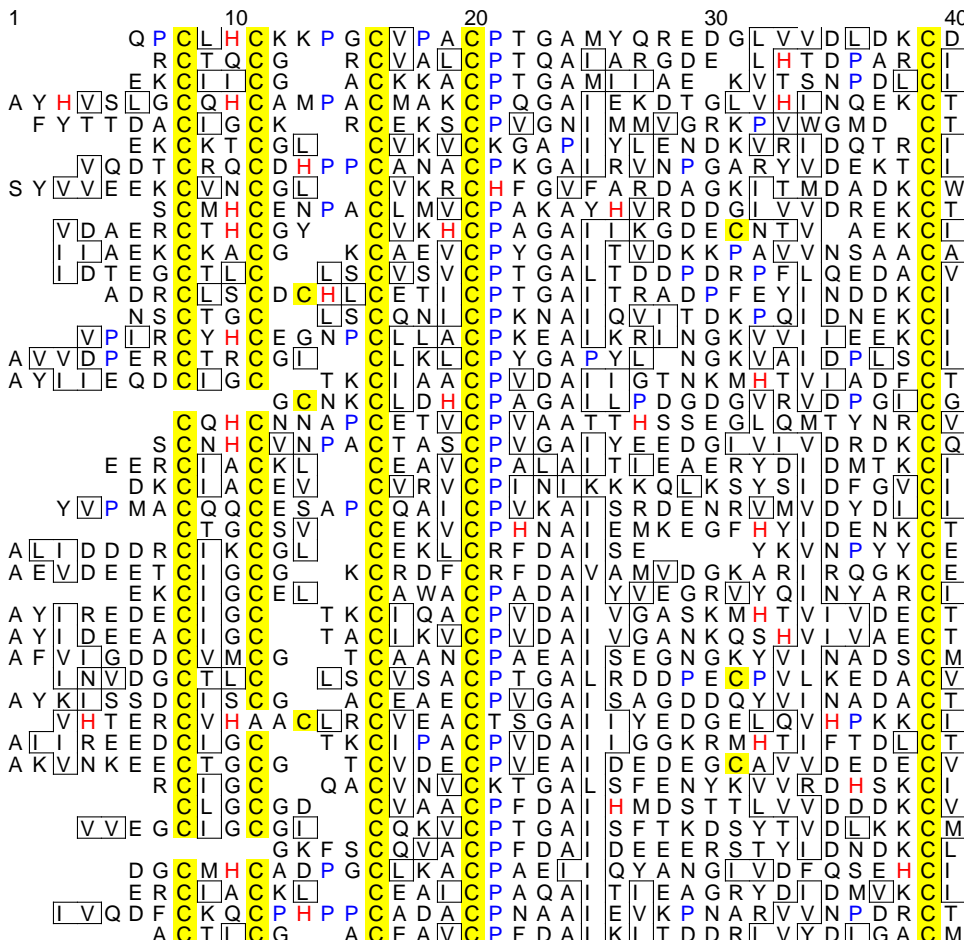
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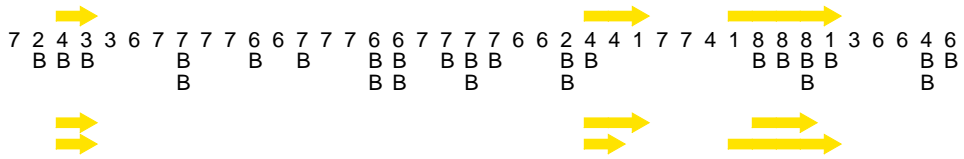


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 G C E L C V E N C P D N A L T L Y N D P D K L L P L D I E L

The diagram illustrates the assembly of a DNA replication fork. The top part shows a replication bubble with two replication forks moving in opposite directions. The bottom part shows a replication fork with a leading strand (synthesized continuously) and a lagging strand (synthesized discontinuously as Okazaki fragments).

