

NTDB	id	320	STU	RS10340	WP	002949220.1	MEQEVFVKAYEKVVRP	IIVLKAFRQQYFIQLWDQADMEQEAMMTLYQLLKKFPDLEKDDDKKL		59											
NTDB	id	47	STER	RS00925	WP	002949220.1	MEQEVFVKAYEKVVRP	IIVLKAFRQQYFIQLWDQADMEQEAMMTLYQLLKKFPDLEKDDDKKL		59											
NTDB	id	468	HSISSA	RS00725	WP	021143466.1	MEQEVFVHAYEYVVRP	IIVLKASRRQYFIQLWDQADMEQEAMMTLYQLLEKFPELKSDDDKKL		59											
NTDB	id	50	STRSA0001	RS07545	WP	002885610.1	MEQEVFVHAYEYVVRP	IIVLKASRRQYFIQLWDLADMEEQEAMMTLYQLLEKFPELKSDDDKKL		59											
NTDB	id	450	SPYM18	RS08475	WP	011018214.1	MSCCFFVVLFILGIVKKKRRLKMSIETRAAFEKVVP	IILKLKRHHYYIQWLDRDDWLQEGHIILLQLLERYPELIEEEEERL		80											
NTDB	id	449	SPYM18	RS01395	WP	011018214.1	MSCCFFVVLFILGIVKKKRRLKMSIETRAAFEKVVP	IILKLKRHHYYIQWLDRDDWLQEGHIILLQLLERYPELIEEEEERL		80											
NTDB	id	448	SpyM6JRS4	RS07800	WP	010921894.1	MSCCFFVVLFILGIVKKKRRLKMSIETRAAFEKVVP	IILKLKRHHYYIQWLDRDDWLQEGHIILLQLLERYPELIEEEEERL		80											
NTDB	id	447	SpyM6JRS4	RS01370	WP	010921894.1	MSCCFFVVLFILGIVKKKRRLKMSIETRAAFEKVVP	IILKLKRHHYYIQWLDRDDWLQEGHIILLQLLERYPELIEEEEERL		80											
NTDB	id	442	SPYM3	RS08515	WP	011106595.1	MSCCFFVVLFILGIVKKKRRLKMSIETRAVFKEKVVP	IILKLKRHHYYIQWLDRDDWLQEGHIILLQLLERYPELIEEEEERL		80											
NTDB	id	441	SPYM3	RS01385	WP	011106595.1	MSCCFFVVLFILGIVKKKRRLKMSIETRAVFKEKVVP	IILKLKRHHYYIQWLDRDDWLQEGHIILLQLLERYPELIEEEEERL		80											
NTDB	id	44	SMU	RS09085	WP	002263585.1	MEEDFEIVFNKVVP	IIVWKLSRYFYIKMWTTREDWQEGMLILHQLLREHPLEEEDDTKL		58											
NTDB	id	141	SP	RS10155	WP	000588925.1	MIKELYEEVQGTVYKCRNEYYLHLWELSDWEQGMICLHELISREEGLVDDIPRL		55												
NTDB	id	140	SP	RS00070	WP	000588925.1	MIKELYEEVQGTVYKCRNEYYLHLWELSDWEQGMICLHELISREEGLVDDIPRL		55												
NTDB	id	252	KZH43	RS09050	WP	000588897.1	MIKELYEEVQGTVYKCRNEYYLHLWELSDWDQEGMICLHELISREEGLVDDIPRL		55												
NTDB	id	251	KZH43	RS09050	WP	000588897.1	MIKELYEEVQGTVYKCRNEYYLHLWELSDWDQEGMICLHELISREEGLVDDIPRL		55												
NTDB	id	211	SPD	RS09675	WP	000588897.1	MIKELYEEVQGTVYKCRNEYYLHLWELSDWDQEGMICLHELISREEGLVDDIPRL		55												
NTDB	id	210	SPD	RS00065	WP	000588897.1	MIKELYEEVQGTVYKCRNEYYLHLWELSDWDQEGMICLHELISREEGLVDDIPRL		55												
NTDB	id	177	SPR	RS09210	WP	000588897.1	MIKELYEEVQGTVYKCRNEYYLHLWELSDWDQEGMICLHELISREEGLVDDIPRL		55												
NTDB	id	176	SPR	RS00065	WP	000588897.1	MIKELYEEVQGTVYKCRNEYYLHLWELSDWDQEGMICLHELISREEGLVDDIPRL		55												
NTDB	id	489	SM12261	RS01070	WP	000471940.1	MFKELYEEVGIVYKCRNEYYLHLWELSDWDQEGMICLHELISREEGLVEDIPRL		55												
NTDB	id	488	SM12261	RS00065	WP	000471939.1	MFKELYEEVGIVYKCRNEYYLHLWELSDWDQEGMICLHELISREEGLVEDIPRL		55												
NTDB	id	516	SMSK321	RS09125	WP	000471944.1	MFKELYKEVGIVYKSRNEYYLHLWELSDWDQEGMICLHELISKEEELAEDIPRL		55												
NTDB	id	517	SMSK321	RS10700	WP	000471945.1	MFKELYKEVGIVYKSRNEYYLHLWELSDWDQEGMICLHELISKEEELVEDIPRL		55												
NTDB	id	424	SGO	RS10430	WP	012130755.1	MKCFEDVYKQVEGIVKRCYKDYYLHLWEYADWRQEGMLVLVELLKSHPNLLEDQPRL		56												
NTDB	id	423	SGO	RS08370	WP	012130755.1	MKCFEDVYKQVEGIVKRCYKDYYLHLWEYADWRQEGMLVLVELLKSHPNLLEDQPRL		56												
NTDB	id	163418	ATM98	RS07000	WP	061564548.1	MNFKITYEKVKWIWVKCEKEFYIHLWDHADWEQGRVLVLEYELQISNPEVEENEETIL		56												
NTDB	id	457	SSUD9	RS00080	WP	002936602.1	MEFEKYVASVKGINVKARKEFYIKLWDRDDWEQEGMMTLFELLQAQPWLVDEQVQL		56												
NTDB	id	461	GPW51	RS00080	WP	011921639.1	MEFEKYVASVKGINVKARKEFYIKLWDRDDWEQEGMMTLFELLQAQPWLVDEQVQL		56												
NTDB	id	454	SSU	RS00080	WP	011921639.1	MEFEKYVASVKGINVKARKEFYIKLWDRDDWEQEGMMTLFELLQAQPWLVDEQVQL		56												
consensus							* * * * *	! * * * * *	*	* * * * *	!	* * * * *	!	* * * ! * * * *	!	* * * ! * * * *	!	* * * ! * * * *	!	* * * ! * * * *	!

logo

NTDB id 320 STU RS10340 WP 002949220.1	R	R	Y	F	K	T	K	F	R	N	R	I	D	E	V	R	R	Q	E	S	V	K	R	Q	A	N	R	Q	C	Y	V	E	I	S	D	I	A	F	C	I	P	N	K	E	L	D	M	V	D	R	L	A	Y	D	E	Q	L	N	A	F	R	E	Q	L	S	S	E	D	S	L	K	L	D	R	L	L	G	G	E	139	
NTDB id 47 STER RS00925 WP 002949220.1	R	R	Y	F	K	T	K	F	R	N	R	I	D	E	V	R	R	Q	E	S	V	K	R	Q	A	N	R	Q	C	Y	V	E	I	S	D	I	A	F	C	I	P	N	K	E	L	D	M	V	D	R	L	A	Y	D	E	Q	L	N	A	F	R	E	Q	L	S	S	E	D	S	L	K	L	D	R	L	L	G	G	E	139	
NTDB id 468 HSISS4 RS00725 WP 021143466.1	R	R	Y	F	K	T	K	F	R	N	R	I	D	E	V	R	R	Q	E	S	V	K	R	Q	A	N	R	Q	C	Y	V	E	I	S	D	I	A	F	C	I	P	N	K	E	L	D	A	V	D	R	L	V	D	E	Q	L	N	A	F	R	N	Q	L	S	S	E	D	A	T	K	L	D	R	L	L	G	E	139			
NTDB id 50 STRSA0001 RS07545 WP 002885610.1	R	R	Y	F	K	T	K	F	R	N	R	I	D	E	V	R	R	Q	E	S	V	K	R	Q	A	N	R	Q	C	Y	V	E	I	S	D	I	A	F	C	I	P	N	K	E	L	D	A	V	D	R	L	V	D	E	Q	L	N	A	F	R	N	Q	L	S	S	E	D	A	T	K	L	D	R	L	L	G	E	139			
NTDB id 450 SPYM18 RS08475 WP 011018214.1	Y	R	Y	F	K	T	K	F	S	S	Y	L	K	D	L	L	R	R	Q	E	S	Q	K	R	Q	F	H	K	L	A	Y	E	E	I	G	E	V	A	H	A	I	P	S	R	G	L	W	L	D	D	Y	V	A	Y	Q	E	V	I	A	S	L	E	N	Q	L	N	S	Q	E	R	M	Q	F	K	A	L	I	R	G	E	160
NTDB id 449 SPYM18 RS01395 WP 011018214.1	Y	R	Y	F	K	T	K	F	S	S	Y	L	K	D	L	L	R	R	Q	E	S	Q	K	R	Q	F	H	K	L	A	Y	E	E	I	G	E	V	A	H	A	I	P	S	R	G	L	W	L	D	D	Y	V	A	Y	Q	E	V	I	A	S	L	E	N	Q	L	N	S	Q	E	R	M	Q	F	K	A	L	I	R	G	E	160
NTDB id 448 SpyM6JRS4 RS07800 WP 010921894.1	Y	R	Y	F	K	T	K	F	S	S	Y	L	K	D	L	L	R	R	Q	E	S	Q	K	R	Q	F	H	K	L	A	Y	E	E	I	G	E	V	A	H	A	I	P	S	R	G	L	W	L	D	D	Y	V	A	Y	Q	E	V	I	A	S	L	E	N	Q	L	N	S	Q	E	R	M	Q	F	K	A	L	I	R	G	E	160
NTDB id 447 SpyM6JRS4 RS01370 WP 010921894.1	Y	R	Y	F	K	T	K	F	S	S	Y	L	K	D	L	L	R	R	Q	E	S	Q	K	R	Q	F	H	K	L	A	Y	E	E	I	G	E	V	A	H	A	I	P	S	R	G	L	W	L	D	D	Y	V	A	Y	Q	E	V	I	A	S	L	E	N	Q	L	N	S	Q	E	R	M	Q	F	K	A	L	I	R	G	E	160
NTDB id 442 SPYM3 RS08515 WP 011106595.1	Y	R	Y	F	K	T	K	F	S	S	Y	L	K	D	L	L	R	R	Q	E	S	Q	K	R	Q	F	H	K	L	A	Y	E	E	I	G	E	V	A	H	A	I	P	S	R	G	L	W	L	D	D	Y	V	A	Y	Q	E	V	I	A	S	L	E	N	Q	L	N	S	Q	E	R	M	Q	F	K	A	L	I	R	G	E	160
NTDB id 441 SPYM3 RS01385 WP 011106595.1	Y	R	Y	F	K	T	K	F	S	S	Y	L	K	D	L	L	R	R	Q	E	S	Q	K	R	Q	F	H	K	L	A	Y	E	E	I	G	E	V	A	H	A	I	P	S	R	G	L	W	L	D	D	Y	V	A	Y	Q	E	V	I	A	S	L	E	N	Q	L	N	S	Q	E	R	M	Q	F	K	A	L	I	R	G	E	160
NTDB id 44 SMU RS09085 WP 002263585.1	Y	I	Y	F	K	T	R	F	S	N	Y	I	K	D	V	L	R	Q	E	S	Q	K	R	F	R	N	R	M	S	Y	E	E	V	G	E	I	E	H	C	L	S	S	G	M	Q	L	D	E	Y	I	L	F	R	D	S	L	A	Y	K	Q	G	L	S	T	E	K	Q	E	L	F	E	R	I	V	A	G	E	138			
NTDB id 141 SP RS10155 WP 000588925.1	R	K	Y	F	K	T	K	F	R	N	R	I	D	Y	I	R	K	Q	E	S	Q	K	R	R	Y	D	K	E	P	Y	E	E	V	G	E	I	S	H	R	I	S	E	G	L	W	L	D	D	Y	Y	L	F	H	E	T	L	R	D	Y	R	N	K	Q	S	K	E	K	Q	E	E	L	E	R	V	L	S	N	E	135		
NTDB id 140 SP RS00070 WP 000588925.1	R	K	Y	F	K	T	K	F	R	N	R	I	D	Y	I	R	K	Q	E	S	Q	K	R	R	Y	D	K	E	P	Y	E	E	V	G	E	I	S	H	R	I	S	E	G	L	W	L	D	D	Y	Y	L	F	H	E	T	L	R	D	Y	R	N	K	Q	S	K	E	K	Q	E	E	L	E	R	V	L	S	N	E	135		
NTDB id 252 KZH43 RS09050 WP 000588897.1	R	K	Y	F	K	T	K	F	R	N	R	I	D	Y	I	R	K	Q	E	S	Q	K	R	R	Y	D	K	E	P	Y	E	E	V	G	E	I	S	H	R	I	S	E	G	L	W	L	D	D	Y	Y	L	F	H	E	T	L	R	D	Y	R	N	K	Q	S	K	E	K	Q	E	E	L	E	R	V	L	S	N	E	135		
NTDB id 251 KZH43 RS09050 WP 000588897.1	R	K	Y	F	K	T	K	F	R	N	R	I	D	Y	I	R	K	Q	E	S	Q	K	R	R	Y	D	K	E	P	Y	E	E	V	G	E	I	S	H	R	I	S	E	G	L	W	L	D	D	Y	Y	L	F	H	E	T	L	R	D	Y	R	N	K	Q	S	K	E	K	Q	E	E	L	E	R	V	L	S	N	E	135		
NTDB id 211 SPD RS09675 WP 000588897.1	R	K	Y	F	K	T	K	F	R	N	R	I	D	Y	I	R	K	Q	E	S	Q	K	R	R	Y	D	K	E	P	Y	E	E	V	G	E	I	S	H	R	I	S	E	G	L	W	L	D	D	Y	Y	L	F	H	E	T	L	R	D	Y	R	N	K	Q	S	K	E	K	Q	E	E	L	E	R	V	L	S	N	E	135		
NTDB id 210 SPD RS00065 WP 000588897.1	R	K	Y	F	K	T	K	F	R	N	R	I	D	Y	I	R	K	Q	E	S	Q	K	R	R	Y	D	K	E	P	Y	E	E	V	G	E	I	S	H	R	I	S	E	G	L	W	L	D	D	Y	Y	L	F	H	E	T	L	R	D	Y	R	N	K	Q	S	K	E	K	Q	E	E	L	E	R	V	L	S	N	E	135		
NTDB id 177 SPR RS09210 WP 000588897.1	R	K	Y	F	K	T	K	F	R	N	R	I	D	Y	I	R	K	Q	E	S	Q	K	R	R	Y	D	K	E	P	Y	E	E	V	G	E	I	S	H	R	I	S	E	G	L	W	L	D	D	Y	Y	L	F	H	E	T	L	R	D	Y	R	N	K	Q	S	K	E	K	Q	E	E	L	E	R	V	L	S	N	E	135		
NTDB id 176 SPR RS00065 WP 000588897.1	R	K	Y	F	K	T	K	F	R	N	R	I	D	Y	I	R	K	Q	E	S	Q	K	R	R	Y	D	K	E	P	Y	E	E	V	G	E	I	S	H	R	I	S	E	G	L	W	L	D	D	Y	Y	L	F	H	E	T	L	R	D	Y	R	N	K	Q	S	K	E	K	Q	E	E	L	E	R	V	L	S	N	E	135		
NTDB id 489 SM12261 RS01070 WP 000471940.1	R	K	Y	F	K	T	K	F	R	N	R	I	D	H	I	R	K	Q	E	S	Q	K	R	R	Y	D	K	E	P	Y	E	E	V	G	E	I	S	H	R	I	S	E	G	M	W	L	D	E	Y	Y	L	F	H	E	T	L	R	D	Y	R	N	K	Q	S	K	D	K	Q	E	E	L	E	R	V	L	R	H	E	135		
NTDB id 488 SM12261 RS00065 WP 000471939.1	R	K	Y	F	K	T	K	F	R	N	R	I	D	Y	I	R	K	Q	E	S	Q	K	R	R	Y	D	K	E	P	Y	E	E	V	G	E	I	S	H	R	I	S	E	G	M	W	L	D	E	Y	Y	L	F	H	E	T	L	R	D	Y	R	N	K	Q	S	K	D	K	Q	E	E	L	E	R	V	L	R	H	E	135		
NTDB id 516 SMSK321 RS09125 WP 000471944.1	R	K	Y	F	K	T	K	F	R	N	R	I	D	Y	I	R	K	Q	E	S	Q	K	R	R	Y	D	K	E	S	Y	E	E	V	G	E	I	S	H	R	I	G	E	G	L	W	L	D	E	Y	Y	L	F	H	E	T	L	R	D	Y	R	S	K	Q	S	K	D	K	Q	E	E	L	E	R	V	L	R	H	E	135		
NTDB id 517 SMSK321 RS10700 WP 000471945.1	R	K	Y	F	K	T	K	F	R	N	R	I	D	Y	I	R	K	Q	E	S	Q	K	R	R	Y	D	K	E	A	Y	E	E	V	G	E	I	S	H	R	I	G	E	G	L	W	L	D	D	Y	Y	L	F	H	E	T	L	R	D	Y	R	S	K	Q	S	K	D	K	Q	E	E	L	E	R	V	L	R	H	E	135		
NTDB id 424 SGO RS10430 WP 012130755.1	Y	R	Y	F	K	T	K	F	R	N	R	I	H	D	L	I	R	R	Q	E	S	Q	K	R	K	L	D	R	Q	P	Y	E	E	V	S	E	I	G	H	R	L	R	M	K	E	L	Y	L	D	E	L	V	A	F	R	S	A	M	S	E	Y	R	S	R	L	S	P	E	A	K	Q	Y	E	R	L	M	A	D	E	136	
NTDB id 423 SGO RS08370 WP 012130755.1	Y	R	Y	F	K	T	K	F	R	N	R	I	H	D	L	I	R	R	Q	E	S	Q	K	R	K	L	D	R	Q	P	Y	E	E	V	S	E	I	G	H	R	L	R	M	K	E	L	Y	L	D	E	L	V	A	F	R	S	A	M	S	E	Y	R	S	R	L	S	P	E	A	K	Q	Y	E	R	L	M	A	D	E	136	
NTDB id 163418 ATM98 RS07000 WP 061564548.1	L	T	Y	F	K	T	K	F	R	N	H	I	K	D	K	V	R	K	Q	E	S	D	K	R	K	L	N	K	V	P	Y	T	E	I	G	E	I	S	H	R	L	R	S	K	E	L	F	L	D	E	L	V	L	R	G	A	L	K	E	F	R	K	N	L	T	D	K	E	K	E	D	Y	D	K	L	M	N	Q	136		
NTDB id 457 SSUD9 RS00080 WP 002936602.1	Y	C	Y	F	K	V	K	F	R	N	R	I	K	D	R	I	R	K	Q	E	S	Q	K	R	K	F	D	R	M	P	H	E	D	I	Y	E	L	S	H	A	I	Q	S	P	G	L	I	N	D	E	L	L	M	L	R	G	A	L	R	D	Y	R	K	N	L	S	N	D	Q	L	D	K	Y	E	K	L	I	S	G	Q	136
NTDB id 461 GPW51 RS00080 WP 011921639.1	Y	C	Y	F	K	V	K	F	R	N	R	I	K	D	R	I	R	K	Q	E	S	Q	K	R	K	F																																																							

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NTDB id 320 STU RS10340 WP 002949220.1	CFRGRKKMIRELRFWMVDFDPCNEED	165
NTDB id 47 STER RS00925 WP 002949220.1	CFRGRKKMIRELRFWMVDFDPCNEED	165
NTDB id 468 HSISS4 RS00725 WP 021143466.1	CFRGRKKMIRELKFWMVDFDPYNEDD	165
NTDB id 50 STRSA0001 RS07545 WP 002885610.1	CFRGRKKMIRELKFWMVDFDPYNEDD	165
NTDB id 450 SPYM18 RS08475 WP 011018214.1	RFKGRALLRKITSPYFKEFAAQL...	183
NTDB id 449 SPYM18 RS01395 WP 011018214.1	RFKGRALLRKITSPYFKEFAAQL...	183
NTDB id 448 SpyM6JRS4 RS07800 WP 010921894.1	RFKGRALLRKITSPYFKEFAAQL...	183
NTDB id 447 SpyM6JRS4 RS01370 WP 010921894.1	RFKGRALLRKITSPYFKEFAAQL...	183
NTDB id 442 SPYM3 RS08515 WP 011106595.1	RFKGRALLRKITSPYFKEFAAQL...	183
NTDB id 441 SPYM3 RS01385 WP 011106595.1	RFKGRALLRKITSPYFKEFAAQL...	183
NTDB id 44 SMU RS09085 WP 002263585.1	RFGRQSMKDLRKKLSDFKEK...	160
NTDB id 141 SP RS10155 WP 000588925.1	RFRGRQVLRDLRIVFKEFTIRTH..	159
NTDB id 140 SP RS00070 WP 000588925.1	RFRGRQVLRDLRIVFKEFTIRTH..	159
NTDB id 252 KZH43 RS09050 WP 000588897.1	RFRGRQVLRDLRIVFKEFTIRTH..	159
NTDB id 251 KZH43 RS09050 WP 000588897.1	RFRGRQVLRDLRIVFKEFTIRTH..	159
NTDB id 211 SPD RS09675 WP 000588897.1	RFRGRQVLRDLRIVFKEFTIRTH..	159
NTDB id 210 SPD RS00065 WP 000588897.1	RFRGRQVLRDLRIVFKEFTIRTH..	159
NTDB id 177 SPR RS09210 WP 000588897.1	RFRGRQVLRDLRIVFKEFTIRTH..	159
NTDB id 176 SPR RS00065 WP 000588897.1	RFRGRQVLRDLRIVFKEFTIRTH..	159
NTDB id 489 SM12261 RS01070 WP 000471940.1	RFRGRQVLRDLRIVFKEFDIRTH..	159
NTDB id 488 SM12261 RS00065 WP 000471939.1	RFRGRQVLRDLRIVFKEFDIRTH..	159
NTDB id 516 SMSK321 RS09125 WP 000471944.1	RFRGRQVLRDLRIVFKEFDIRTR..	159
NTDB id 517 SMSK321 RS10700 WP 000471945.1	RFRGRQVLRDLRIVFKEFDIRTQ..	159
NTDB id 424 SGO RS10430 WP 012130755.1	RFKGRKAMLKDLSYHLRDFNPRLD..	160
NTDB id 423 SGO RS08370 WP 012130755.1	RFKGRKAMLKDLSYHLRDFNPRLD..	160
NTDB id 163418 ATM98 RS07000 WP 061564548.1	RFSGRAKMRRLKEYLKDFKDQHL..	160
NTDB id 457 SSUD9 RS00080 WP 002936602.1	CFNGRREMIRDLQIHLKDFR.....	156
NTDB id 461 GPW51 RS00080 WP 011921639.1	CFNGRREMIRDLQIHLKDFR.....	156
NTDB id 454 SSU RS00080 WP 011921639.1	CFNGRREMIRDLQIHLKDFR.....	156
consensus	*!*!! ****!!	

- ☒ non conserved
- ☒ similar
- ☒ ≥ 50% conserved