

NTDB id	601	KW2	RS02615	WP	021036805.1	MLCQNCNINEA.....TI	13
NTDB id	378	SMU	RS02690	WP	002263569.1	MLCQNCKLINEA.....TI	13
NTDB id	281	KZH43	RS03550	WP	000882517.1	MLCQNCKINDS.....TI	13
NTDB id	245	SPD	RS03860	WP	000882517.1	MLCQNCKINDS.....TI	13
NTDB id	243	SPR	RS03635	WP	000882517.1	MLCQNCKINDS.....TI	13
NTDB id	241	SP	RS04015	WP	000882523.1	MLCQNCKINDS.....TI	13
NTDB id	85	BSU	00860	NP	387967.1	. .MMFGRFTERAQKVLALAQEEALRLGHNNIGTEHILLGLVREGEGIAAKALQALGLGSEKIQKEVESLIG.....RGQEMS	75
NTDB id	610	V4T04	RS10165	WP	012897346.1	MKFENIKYTPTLDRILEKAEEYAHHQYQYGTTIESAHLLAAMATTSGSIAYSLLAGMNVDDSDLLIDL.....EDLSSHVKVR	77
NTDB id	290	KZH43	RS10025	WP	001109677.1	MNYSKALNECIESAYMVAGHFARYLESWHLLIAMSNHSYSVAGATLNDYPYEMDRLE....EVALELTETDYSQDETTF	75
NTDB id	289	SPD	RS10700	WP	001109677.1	MNYSKALNECIESAYMVAGHFARYLESWHLLIAMSNHSYSVAGATLNDYPYEMDRLE....EVALELTETDYSQDETTF	75
NTDB id	287	SP	RS11210	WP	001109712.1	MNYSKALNECIESAYMVAGHFARYLESWHLLIAMSNHSYSVAGATLNDYPYEMDRLE....EVALELTETDYSQDETTF	75
NTDB id	377	SMU	RS09275	WP	002262344.1	...MTDYSLKMQEVFRLAQFEAAARFESSYLESWHVLLAMVEIDSSVAGLSFAEFADRVRFEDYQAAAIIAIGKKPKSSSN..DI	79
NTDB id	297	STER	RS00545	WP	011680614.1	...MTIYSRKMQAIFHRAQLEAERFESPFL ETWHVLLAMVEVTGSVAYLTFTDFEDRIHSEEIETA AAVLAMEKR PKDLSES DI	81
NTDB id	329	STU	RS10020	WP	011225298.1	...MTIYSRKMQAIFHRAQLEAERFESPFL ETWHVLLAMVEVPGSVAYLTFTDFEDRIHSEEIETA AAVLAMEKR PKDLSES DI	81
consensus						*** * * * * **** ** **	

NTDB id 601 KW2 RS02615 WP 021036805.1	HL YTSVNGQKKQIDLCQNCYQ...IMKSGGQALFCAGNASNGNSDEP.....FNP.FNDIFSALQGG.DFNGAASN..	80	
NTDB id 378 SMU RS02690 WP 002263569.1	HL YANVNGQKKQIDLCQNCYQ...IMKTDPENGPLNHL SQGNSSS.....INPFFDDFFGDLNNFRAFNQDLP..	79	
NTDB id 281 KZH43 RS03550 WP 000882517.1	HL YTNLNGKQKQIDLCQNCYK...IIKTDPNNSLFGKMTDLNNRD.....FDP.FGDFFNDLNNFRPSSN..TP.	76	
NTDB id 245 SPD RS03860 WP 000882517.1	HL YTNLNGKQKQIDLCQNCYK...IIKTDPNNSLFGKMTDLNNRD.....FDP.FGDFFNDLNNFRPSSN..TP.	76	
NTDB id 243 SPR RS03635 WP 000882517.1	HL YTNLNGKQKQIDLCQNCYK...IIKTDPNNSLFGKMTDLNNRD.....FDP.FGDFFNDLNNFRPSSN..TP.	76	
NTDB id 241 SP RS04015 WP 000882523.1	HL YTNLNGKQKQIDLCQNCYK...IIKTDPNNSLFGKMTDLNNRD.....FDP.FGDFFNDLNNFRPSSN..TP.	76	
NTDB id 85 BSU 00860 NP 387967.1	QTIHYTPRAKKVIELSMDEARKLGHSYVGTEHTILLGLIREGEGVAARVLNNLGVSLNKARQQVLQL.....LGSNET....	147	
NTDB id 610 V4T04 RS10165 WP 012897346.1	STLRFSPRAEEVMTAASFIAHNNEAVGTEHLLYALLQVEDFGFLQLLKL.....QKINIVSLRKELEKRTGLKVPESKK	153	
NTDB id 290 KZH43 RS10025 WP 001109677.1	TELPFSRRLQILFDEAEYVASVVHAKVLGTEHVLYAILHGDGNALATRILERAGFSYEDKKDQVKIAALRRNLEERAGWTREDLKA	160	
NTDB id 289 SPD RS10700 WP 001109677.1	TELPFSRRLQILFDEAEYVASVVHAKVLGTEHVLYAILHGDGNALATRILERAGFSYEDKKDQVKIAALRRNLEERAGWTREDLKA	160	
NTDB id 287 SP RS11210 WP 001109712.1	TELPFSRRLQVLFDEAEYVASVVHAKVLGTEHVLYAILHDSNALATRILERAGFSYEDKKDQVKIAALRRNLEERAGWTREDLKA	160	
NTDB id 377 SMU RS09275 WP 002262344.1	MLLEQSHALKRTLAEEAAISQVTHAKEVGTEHVLFAMLLNPMLLATRILELVGFHAKDDGESIRLLDLRKVITERYAGFSKEDIKA	164	
NTDB id 297 STER RS00545 WP 011680614.1	DLRAQSPALEAMLQEAQEIASVTGAVEVGESEHVLMFAFLHKDLMVCRLLLEVAGFQYKDDSDKPRIIDLRRSLERNAGLSKQDLKA	166	
NTDB id 329 STU RS10020 WP 011225298.1	DLRAQSPALEAMLQEAQGIASVTGAVEVGESEHVLMFAFLHKDLMVCRLLLEVAGFQYKDDSDKPRIIDLRRSLERNAGLSKQDLKA	166	
consensus	* ** * * * * *	* * * * * * * * *	* * *

NTDB id 601 KW2 RS02615 WP 021036805.1	QTPPTQTGG.....RGPRGPQNPRAKQPKGMLEEFGINITESARRGEIDPVGIRDEEIKRVIEILNRRRTKNNPVL	151
NTDB id 378 SMU RS02690 WP 002263569.1	NTPPTQAGGGNGNGGN.N.RRPGGPQQQASQKPNGLLEEFGINLTDIARKGEIDPVGIRDEEITRVIEILNRRRTKNNPVL	158
NTDB id 281 KZH43 RS03550 WP 000882517.1	PIPTQSGGGYGGNGGYGSQNRGSAQTTPPSQEKGLEEFGINVTEIARRGIDPVGIRDDEIIRVIEILNRRRTKNNPVL	157
NTDB id 245 SPD RS03860 WP 000882517.1	PIPTQSGGGYGGNGGYGSQNRGSAQTTPPSQEKGLEEFGINVTEIARRGIDPVGIRDDEIIRVIEILNRRRTKNNPVL	157
NTDB id 243 SPR RS03635 WP 000882517.1	PIPTQSGGGYGGNGGYGSQNRGSAQTTPPSQEKGLEEFGINVTEIARRGIDPVGIRDDEIIRVIEILNRRRTKNNPVL	157
NTDB id 241 SP RS04015 WP 000882523.1	PIPTQSGGGYGGNGGYGSQNRGSAQTTPPSQEKGLEEFGINVTEIARRGIDPVGIRDDEIIRVIEILNRRRTKNNPVL	157
NTDB id 85 BSU 00860 NP 387967.1	GSSAAGTNSNANTPTLDSLARDLTAIAKEDSLDPVIGRSKEIQRVIEVLSRRTKNNPVL	207
NTDB id 610 V4T04 RS10165 WP 012897346.1	AVTPMSKRKMAKG.....VAENSTPTLDSVSSDLTEEARLGKLDPMIGRAEAEIDRLIHILSRRTKNNPVLV	220
NTDB id 290 KZH43 RS10025 WP 001109677.1	.LRQRHRTV.ADK.....QNSMANMMMGMPQTPSGGLEDYTHDLTEQARSCKLEPVIGRDKEISRMIIQLSRKTNNPVLV	233
NTDB id 289 SPD RS10700 WP 001109677.1	.LRQRHRTV.ADK.....QNSMANMMMGMPQTPSGGLEDYTHDLTEQARSCKLEPVIGRDKEISRMIIQLSRKTNNPVLV	233
NTDB id 287 SP RS11210 WP 001109712.1	.LRQRHRTV.ADK.....QNSMANMMMGMPQTPSGGLEDYTHDLTEQARSCKLEPVIGRDKEISRMIIQLSRKTNNPVLV	233
NTDB id 377 SMU RS09275 WP 002262344.1	.IFEMRKPKKVKN.....SSSFSDLMKPP.SVTGELADFTRDLTELARQGRLEPVIGREQEISRMVQILSRKTNNPVLV	237
NTDB id 297 STER RS00545 WP 011680614.1	.IHDLRKPKKSKA.....SANFANMMQPPQSSTGELADYTKDLTALAESGNLDPVIGRDEEISRMIIQLVLSRKTNNPVLV	240
NTDB id 329 STU RS10020 WP 011225298.1	.IHDLRKPKKSKA.....SANFANMMQPPQSSTGELADYTKDLTALAESGNLDPVIGRDEEISRMIIQLVLSRKTNNPVLV	240
consensus	* * *	

NTDB id 601 KW2 RS02615 WP 021036805.1	EVTDEDMPVITEKDI	EQIVEQKTI	QIPVGD	LKEKE	QTLIN	LADDL	KAHVIGQDE	AVDKI	ISKAIRRSRVGL	GKPNRP	IGSFL	FVGP	482			
NTDB id 378 SMU RS02690 WP 002263569.1	KLDKENTPVITEKNI	EVIVEQKTN	IPVIGEL	LKEKE	EQSQLI	HLADDL	KTRVIGQDA	AVDKI	IAKAIRNRVGL	GTPNRP	IGSFL	FVGP	489			
NTDB id 281 KZH43 RS03550 WP 000882517.1	KITDQDTP	IIEKTI	IEHII	EQKTN	IPVGD	LKEKE	EQSQLI	HLAEDL	KSHVIGQDD	AVDKI	IAKAIRNRVGL	GTPNRP	IGSFL	488		
NTDB id 245 SPD RS03860 WP 000882517.1	KITDQDTP	IIEKTI	IEHII	EQKTN	IPVGD	LKEKE	EQSQLI	HLAEDL	KSHVIGQDD	AVDKI	IAKAIRNRVGL	GTPNRP	IGSFL	488		
NTDB id 243 SPR RS03635 WP 000882517.1	KITDQDTP	IIEKTI	IEHII	EQKTN	IPVGD	LKEKE	EQSQLI	HLAEDL	KSHVIGQDD	AVDKI	IAKAIRNRVGL	GTPNRP	IGSFL	488		
NTDB id 241 SP RS04015 WP 000882523.1	KITDQDTP	SIIEKTI	IEHII	EQKTN	IPVGD	LKEKE	EQSQLI	HLAEDL	KSHVIGQDD	AVDKI	IAKAIRNRVGL	GTPNRP	IGSFL	488		
NTDB id 85 BSU 00860 NP 387967.1	EKQQGENSE	VTVDDI	IAMVVS	SWTGV	PVSKI	IAQTETD	KLNL	MENIL	HSRVIGQDE	AVVA	VAKAVRRAR	AGLKDP	KRPIGS	FI	FLGP	546
NTDB id 610 V4T04 RS10165 WP 012897346.1	.VKEDKRQEV	TVDA	VAVAST	LTGVP	ITQMT	KSESD	RLINLEK	ELHKKRV	IGQDE	AVSA	VSRAIRRAR	SGVADSR	NRPMGS	F	FLGP	555
NTDB id 290 KZH43 RS10025 WP 001109677.1	.VPV.YKDL	VTESD	ILTTLS	RSLSG	IPVQKLT	QTDA	KKYLNLEA	ELHKKRV	IGQDQAV	SS	ISRAIRNRQSG	IRSHKR	PIGS	FM	FLGP	550
NTDB id 289 SPD RS10700 WP 001109677.1	.VPV.YKDL	VTESD	ILTTLS	RSLSG	IPVQKLT	QTDA	KKYLNLEA	ELHKKRV	IGQDQAV	SS	ISRAIRNRQSG	IRSHKR	PIGS	FM	FLGP	550
NTDB id 287 SP RS11210 WP 001109712.1	.VPV.YKDL	VTESD	ILTTLS	RSLSG	IPVQKLT	QTDA	KKYLNLEA	ELHKKRV	IGQDQAV	SS	ISRAIRNRQSG	IRSHKR	PIGS	FM	FLGP	550
NTDB id 377 SMU RS09275 WP 002262344.1	.PLLKKRAE	VKEED	ILATLS	SKLSG	IPVKKLT	QAD	SKKYLN	LEREL	HKKRVIGQDD	AVSS	ISRAIRNRQSG	IRVGKR	PIGS	FM	FLGP	553
NTDB id 297 STER RS00545 WP 011680614.1	.AKFPKPA	LVDADQ	IMQTL	SRLSG	IPVEKMT	QTDS	KRYLN	NLESEL	HKKRVIGQDE	AVSA	ISRAIRNRQSG	IRTGKR	PIGS	FM	FLGP	556
NTDB id 329 STU RS10020 WP 011225298.1	.AKFPKPA	LVDADQ	IMQTL	SRLSG	IPVEKMT	QTDS	KRYLN	NLESEL	HKKRVIGQDE	AVSA	ISRAIRNRQSG	IRTGKR	PIGS	FM	FLGP	556
consensus	*	*****	*	***	*****!	*	*	*****	*****	*****!	*****	*****!	*****	*****!	*****!	*****!

[illegible]

NTDB	id	601	KW2	RS02615	WP	021036805.1	QI	L	E	D	G	R	L	T	D	A	A	G	R	T	V	S	F	K	D	S	L	I	I	M	T	S	N	A	G	T	G	K	.	.	V	E	A	S	V	G	F	G	A	A	R	E	G	.	.	.	.	.	R	T	K	S	V	L	G	Q	L	G	D	F	S	S	P	E	F	M	N	R	F	D	G	I	E	F	S	A	L	S	K		645		
NTDB	id	378	SMU	RS02690	WP	002263569.1	Q	V	L	D	D	G	R	L	T	D	G	Q	G	R	T	V	S	F	K	D	T	I	I	I	M	T	S	N	A	G	T	G	K	.	.	S	E	A	N	V	G	F	G	A	S	R	E	G	.	.	.	.	.	R	T	N	S	V	L	G	E	L	G	N	F	S	S	P	E	F	M	N	R	F	D	G	I	E	F	Q	A	L	S	K		652	
NTDB	id	281	KZH43	RS03550	WP	000882517.1	Q	V	L	D	D	G	R	L	T	D	G	Q	G	R	T	V	S	F	K	D	A	I	I	I	M	T	S	N	A	G	T	G	K	.	.	T	E	A	S	V	G	F	G	A	A	R	E	G	.	.	.	.	.	R	T	N	S	V	L	G	E	L	G	N	F	S	S	P	E	F	M	N	R	F	D	G	I	E	F	K	A	L	S	K		651	
NTDB	id	245	SPD	RS03860	WP	000882517.1	Q	V	L	D	D	G	R	L	T	D	G	Q	G	R	T	V	S	F	K	D	A	I	I	I	M	T	S	N	A	G	T	G	K	.	.	T	E	A	S	V	G	F	G	A	A	R	E	G	.	.	.	.	.	R	T	N	S	V	L	G	E	L	G	N	F	S	S	P	E	F	M	N	R	F	D	G	I	E	F	K	A	L	S	K		651	
NTDB	id	243	SPR	RS03635	WP	000882517.1	Q	V	L	D	D	G	R	L	T	D	G	Q	G	R	T	V	S	F	K	D	A	I	I	I	M	T	S	N	A	G	T	G	K	.	.	T	E	A	S	V	G	F	G	A	A	R	E	G	.	.	.	.	.	R	T	N	S	V	L	G	E	L	G	N	F	S	S	P	E	F	M	N	R	F	D	G	I	E	F	K	A	L	S	K		651	
NTDB	id	241	SP	RS04015	WP	000882523.1	Q	V	L	D	D	G	R	L	T	D	G	Q	G	R	T	V	S	F	K	D	A	I	I	I	M	T	S	N	A	G	T	G	K	.	.	T	E	A	S	V	G	F	G	A	A	R	E	G	.	.	.	.	.	R	T	N	S	V	L	G	E	L	G	N	F	S	S	P	E	F	M	N	R	F	D	G	I	E	F	K	A	L	S	K		651	
NTDB	id	85	BSU	00860	NP	387967.1	Q	V	L	E	D	G	R	L	T	D	S	K	G	R	T	V	D	F	R	N	T	I	L	I	M	T	S	N	V	G	A	S	E	L	K	R	N	K	Y	V	G	F	N	V	Q	D	E	T	Q	N	H	K	D	M	K	D	V	M	G	E	L	K	R	A	F	R	P	E	F	I	N	R	I	D	E	I	I	V	F	H	S	L	E	K		716	
NTDB	id	610	V4T04	RS10165	WP	012897346.1	Q	I	L	D	D	G	F	V	T	D	T	K	G	R	K	V	D	F	S	N	T	I	I	I	M	T	S	N	L	G	A	T	A	L	R	D	D	K	T	V	G	F	G	A	K	N	I	T	A	D	Y	S	A	M	K	S	R	I	L	E	E	L	K	R	H	Y	R	P	E	F	L	N	R	I	D	E	I	I	V	F	H	S	L	E	S		725
NTDB	id	290	KZH43	RS10025	WP	001109677.1	Q	V	L	D	D	G	V	L	T	D	S																																																																												

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NTDB id 601 KW2 RS02615 WP 021036805.1	ENLLKIVDLMLDEVNEQIGRNDIHLSTVQAAKEKLVDLGYNPAMGARPLRRTIQENTIEDSTADFFYTEHPEYKQL.VADLIDDKIV	729
NTDB id 378 SMU RS02690 WP 002263569.1	DNLLQIVSLMLDDVNQRLAVNAIHLDTDKVKEKLVLDLGYDPKMGARPLRRTIQEHIEDAITDFYLEHPEQKEL.KAIVMTSNGKI	736
NTDB id 281 KZH43 RS03550 WP 000882517.1	DNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKLVLDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKDL.KAVMTSKGNI	735
NTDB id 245 SPD RS03860 WP 000882517.1	DNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKLVLDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKDL.KAVMTSKGNI	735
NTDB id 243 SPR RS03635 WP 000882517.1	DNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKLVLDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKDL.KAVMTSKGNI	735
NTDB id 241 SP RS04015 WP 000882523.1	DNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKLVLDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKDL.KAVMTSKGNI	735
NTDB id 85 BSU 00860 NP 387967.1	KHLTEIVSLMSDQLTKRLKEQDLSTIELTDAAKAKVAEEGVLDLEYGARPLRRAIQKHVEDRLSEELLRGNIHKGQHTIVLDVEDGEF	801
NTDB id 610 V4T04 RS10165 WP 012897346.1	QEIEQIVKIMSKSLIKRLAEQDIHVKLTPSAVKLIAEVGFDPEYGARPLRKALQKEVEDLLSEQLLSGETKAGNHVSTIGASNKKI	810
NTDB id 290 KZH43 RS10025 WP 001109677.1	DHMQEVVKIMVKPLVASLAEKGIIDLKLQASALKLLANQGYDPEMGARPLRRTLQTEVEDKLAELLKGDIVAGSILKIGVKAGQL	805
NTDB id 289 SPD RS10700 WP 001109677.1	DHMQEVVKIMVKPLVASLAEKGIIDLKLQASALKLLANQGYDPEMGARPLRRTLQTEVEDKLAELLKGDIVAGSILKIGVKAGQL	805
NTDB id 287 SP RS11210 WP 001109712.1	DHMQEVVKIMVKPLVASLAEKGIIDLKLQASALKLLANQGYDPEMGARPLRRTLQTEVEDKLAELLKGDIVAGSILKIGVKAGQL	805
NTDB id 377 SMU RS09275 WP 002262344.1	EDIRHIVKIMVAPLIAHLADQGKITLKFQPSALKHLALAGYDAEMGARPLRRTLQTEVEDKLAELLKGDIVAGSILKIGVKAGQL	808
NTDB id 297 STER RS00545 WP 011680614.1	EQLHDIVKIMVKPLISALADKGISLKFQPAALKHLAKDGYDIEMGARPLRRTIQTQVEDKLSLELLGGQVVSQQTILKIGCSKDKL	811
NTDB id 329 STU RS10020 WP 011225298.1	EQLHDIVKIMVKPLISALADKGISLKFQPAALKHLAKDGYDIEMGARPLRRTIQTQVEDKLSLELLGGQVVSQQTILKIGCSKDKL	811
consensus	*** *! *!* * **** * * * * !*****!!!!!!***! *!! *** ** * * * * * * * *	

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NTDB id 601 KW2 RS02615 WP 021036805.1	ISNQTQETAETTDEEVPAE	748
NTDB id 378 SMU RS02690 WP 002263569.1	VIKASNK.VETVTKATSD.	753
NTDB id 281 KZH43 RS03550 WP 000882517.1	QIKSAKK.AEVKSSEKEK.	752
NTDB id 245 SPD RS03860 WP 000882517.1	QIKSAKK.AEVKSSEKEK.	752
NTDB id 243 SPR RS03635 WP 000882517.1	QIKSAKK.AEVKSSEKEK.	752
NTDB id 241 SP RS04015 WP 000882523.1	QIKSAKK.AEVKSSEKEK.	752
NTDB id 85 BSU 00860 NP 387967.1	VVKTTAKTN.....	810
NTDB id 610 V4T04 RS10165 WP 012897346.1	KIAQIV.....	816
NTDB id 290 KZH43 RS10025 WP 001109677.1	KFDIA.....	810
NTDB id 289 SPD RS10700 WP 001109677.1	KFDIA.....	810
NTDB id 287 SP RS11210 WP 001109712.1	KFDIA.....	810
NTDB id 377 SMU RS09275 WP 002262344.1	KFDIV.....	813
NTDB id 297 STER RS00545 WP 011680614.1	TFTVV.....	816
NTDB id 329 STU RS10020 WP 011225298.1	TFTVV.....	816
consensus		

- ⓧ non conserved
- ✖ similar
- ⓧ ≥ 50% conserved