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NTDB id 600 KW2 RS01765 WP 011675413.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	V	A	L	H	A	V	A	A	V	Q	K	E	G	G	I	A	A	F	I	D	A	E	H	A	L	D	P	Y	A	A	A	A	L	G	V	N	I	D	E	L	L	S	Q	P	D	Y	G	E	Q	G	L	I	A	E	K	L	I	T	S	G	A	V	D	L		
NTDB id 269 KZH43 RS08665 WP 001085462.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	V	A	L	H	A	V	A	A	V	Q	K	E	G	G	I	A	A	F	I	D	A	E	H	A	L	D	P	Y	A	A	A	A	L	G	V	N	I	D	E	L	L	S	Q	P	D	S	G	E	Q	G	L	I	A	G	K	L	I	D	S	G	A	V	D	L		
NTDB id 228 SPD RS09265 WP 001085462.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	V	A	L	H	A	V	A	A	V	Q	K	E	G	G	I	A	A	F	I	D	A	E	H	A	L	D	P	Y	A	A	A	L	G	V	N	I	D	E	L	L	S	Q	P	D	S	G	E	Q	G	L	I	A	G	K	L	I	D	S	G	A	V	D	L			
NTDB id 194 SPR RS08825 WP 001085462.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	V	A	L	H	A	V	A	A	V	Q	K	E	G	G	I	A	A	F	I	D	A	E	H	A	L	D	P	Y	A	A	A	L	G	V	N	I	D	E	L	L	S	Q	P	D	S	G	E	Q	G	L	I	A	G	K	L	I	D	S	G	A	V	D	L			
NTDB id 159 SP RS09750 WP 001085462.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	V	A	L	H	A	V	A	A	V	Q	K	E	G	G	I	A	A	F	I	D	A	E	H	A	L	D	P	Y	A	A	A	L	G	V	N	I	D	E	L	L	S	Q	P	D	S	G	E	Q	G	L	I	A	G	K	L	I	D	S	G	A	V	D	L			
NTDB id 499 SM12261 RS08315 WP 078228268.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	V	A	L	H	A	V	A	A	V	Q	K	E	G	G	I	A	A	F	I	D	A	E	H	A	L	D	P	Y	A	A	A	L	G	V	N	I	D	E	L	L	S	Q	P	D	S	G	E	Q	G	L	I	A	G	K	L	I	D	S	G	A	V	D	L			
NTDB id 527 SMSK321 RS11065 WP 001085454.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	V	A	L	H	A	V	A	A	V	Q	K	E	G	G	I	A	A	F	I	D	A	E	H	A	L	D	P	Y	A	A	A	L	G	V	N	I	D	E	L	L	S	Q	P	D	S	G	E	Q	G	L	I	A	G	K	L	I	D	S	G	A	V	D	L			
NTDB id 453 Spy49 1753c ACI62003.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	V	A	L	H	A	V	A	A	V	Q	K	E	G	G	I	A	A	F	I	D	A	E	H	A	L	D	P	Y	A	A	A	L	G	V	N	I	D	E	L	L	A	Q	P	D	S	G	E	Q	G	L	I	A	G	K	L	I	D	S	G	A	V	D	L			
NTDB id 408 SMU RS09530 WP 002262392.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	V	A	L	H	A	V	A	A	V	Q	K	E	G	G	I	A	A	F	I	D	A	E	H	A	L	D	P	Y	A	A	A	L	G	V	N	I	D	E	L	L	S	Q	P	D	S	G	E	Q	G	L	I	A	G	K	L	I	D	S	G	A	V	D	L			
NTDB id 115 BSU 16940 NP 389576.2	I	V	E	V	Y	G	P	E	S	S	G	K	T	T	V	A	L	H	A	I	A	E	V	Q	Q	Q	G	G	A	A	F	I	D	A	E	H	A	L	D	P	V	Y	A	Q	K	L	G	V	N	I	E	E	L	L	S	Q	P	D	T	G	E	Q	A	L	E	I	A	E	A	L	V	R	S	G	A	V	D	I		
NTDB id 625 LCA RS02525 WP 011374196.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	V	A	L	H	A	V	A	E	V	Q	K	Q	G	G	T	A	A	Y	I	D	A	E	N	A	M	D	P	K	Y	A	T	A	L	G	V	N	I	D	D	L	L	S	Q	P	D	T	G	E	Q	G	L	E	I	A	D	A	L	V	S	S	G	A	V	D	I	
NTDB id 1313 DR RS12030 WP 010888966.1	I	T	E	I	Y	G	P	E	S	G	G	K	T	T	L	A	L	A	I	V	A	Q	A	Q	K	A	G	G	T	C	A	F	I	D	A	E	H	A	L	D	P	V	Y	A	R	A	L	G	V	N	T	D	E	L	L	V	S	Q	P	D	N	G	E	Q	A	L	E	I	M	E	L	L	V	R	S	G	A	I	D	V
NTDB id 36077 ECHVI RS00205 WP 015263915.1	V	I	E	V	Y	G	P	E	S	S	G	K	T	T	L	A	M	H	C	I	A	E	A	Q	K	K	G	M	A	A	I	D	A	E	H	A	F	D	K	S	Y	A	E	K	L	G	I	D	E	N	L	L	S	Q	P	D	N	G	E	Q	A	L	E	I	A	E	H	L	I	R	S	G	A	L	D	I				
NTDB id 1334 RAOC RS04870 WP 004918236.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	L	T	L	H	A	I	A	E	A	Q	K	V	G	G	T	A	A	F	I	D	A	E	H	A	F	D	M	H	Y	A	E	K	L	G	I	N	L	E	L	I	V	S	Q	P	D	N	G	E	Q	A	L	E	I	A	D	S	L	I	R	S	G	V	D	I		
NTDB id 1245 Cj1673c YP 002345041.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	L	T	L	H	I	I	A	E	C	Q	K	A	G	G	V	C	A	F	I	D	A	E	H	A	L	D	V	K	Y	A	K	N	L	G	V	N	T	D	D	L	Y	V	S	Q	P	D	F	G	E	Q	A	L	E	I	V	E	T	I	A	R	S	G	A	V	D	L
NTDB id 1211 C694 RS00795 WP 000963128.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	L	S	L	H	I	I	A	E	C	Q	K	N	G	G	V	C	A	F	I	D	A	E	H	A	L	D	V	H	Y	A	K	R	L	G	V	D	E	N	L	L	V	S	Q	P	D	T	G	E	Q	A	L	E	I	L	E	T	I	T	R	S	G	G	I	D	L	
NTDB id 1214 NCTC11637 00359 SQJ03206.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	L	S	L	H	I	I	A	E	C	Q	K	N	G	G	V	C	A	F	I	D	A	E	H	A	L	D	V	H	Y	A	K	R	L	G	V	D	E	N	L	L	V	S	Q	P	D	T	G	E	Q	A	L	E	I	L	E	T	I	T	R	S	G	G	I	D	L	
NTDB id 1389 A4U84 RS07560 WP 021112712.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	L	T	L	S	L	I	A	Q	A	Q	K	G	N	K	T	C	A	F	I	D	A	E	H	A	L	D	P	V	Y	A	R	N	L	G	V	N	T	D	E	L	L	S	Q	P	D	N	G	E	Q	A	L	E	I	C	D	A	L	V	R	S	G	A	V	D	V	
NTDB id 1130 NGFG RS03960 WP 003688695.1	I	V	E	I	F	G	P	E	S	S	G	K	T	T	L	C	L	E	A	V	A	Q	C	Q	K	N	G	G	V	C	A	F	V	D	A	E	H	A	F	D	P	V	Y	A	R	K	L	G	V	K	V	E	E	L	Y	L	S	Q	P	D	T	G	E	Q	A	L	E	I	C	D	T	L	V	R	S	G	G	I	D	M
NTDB id 1124 NGFG RS03960 WP 003688695.1	I	V	E	I	F	G	P	E	S	S	G	K	T	T	L	C	L	E	A	V	A	Q	C	Q	K	N	G	G	V	C	A	F	V	D	A	E	H	A	F	D	P	V	Y	A	R	K	L	G	V	K	V	E	E	L	Y	L	S	Q	P	D	T	G	E	Q	A	L	E	I	C	D	T	L	V	R	S	G	G	I	D	M
NTDB id 1123 OK783 RS03845 WP 003688695.1	I	V	E	I	F	G	P	E	S	S	G	K	T	T	L	C	L	E	A	V	A	Q	C	Q	K	N	G	G	V	C	A	F	V	D	A	E	H	A	F	D	P	V	Y	A	R	K	L	G	V	K	V	E	E	L	Y	L	S	Q	P	D	T	G	E	Q	A	L	E	I	C	D	T	L	V	R	S	G	G	I	D	M
NTDB id 1427 RS RS02760 WP 011000510.1	V	V	E	I	Y	G	P	E	S	S	G	K	T	T	L	T	L	Q	V	V	A	E	M	Q	K	L	G	G	T	C	A	F	I	D	A	E	H	A	L	D	V	T	Y	A	D	K	L	G	V	K	V	P	D	L	L	S	Q	P	D	T	G	E	Q	A	L	E	I	A	D	A	L	V	R	S	G	S	V	D	L	
NTDB id 1165 A1552VC RS01565 WP 000344154.1	I	V	E	I	F	G	P	E	S	S	G	K	T	T	L	T	L	E	L	I	A	A	A	Q	R	E	G	K	T	C	A	F	I	D	A	E	H	A	L	D	P	V	Y	A	K	K	L	G	V	N	I	D	E	L	L	V	S	Q	P	D	T	G	E	Q	A	L	E	I	C	D	A	L	A	R	S	G	A	V	D	V
NTDB id 1142 GTF74 RS11550 WP 000344154.1	I	V	E	I	F	G	P	E	S	S	G	K	T	T	L	T	L	E	L	I	A	A	A	Q	R	E	G	K	T	C	A	F	I	D	A	E	H	A	L	D	P	V	Y	A	K	K	L	G	V	N	I	D	E	L	L	V	S	Q	P	D	T	G	E	Q	A	L	E	I	C	D	A	L	A	R	S	G	A	V	D	V
NTDB id 1074 ABD1 RS10195 WP 000344167.1	I	I	E	I	Y	G	P	E	S	S	G	K	T	T	M	T	L	Q	A	I	A	Q	C	Q	K	S	G	G	T	C	A	F	I	D	A	E	H	A	L	D	P	Q	Y	A	R	K	L	G	V	D	I	D	N	L	L	V	S	Q	P	D	N	G	E	Q	A	L	E	I	A	D	M	L	V	R	S	G	A	I	D	L
NTDB id 1022 ACIAD RS06390 WP 004925639.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	M	T	L	Q	A	I	A	Q	C	Q	K	A	G	G	T	C	A	F	I	D	A	E	H	A	L	D	P	Q	Y	A	R	K	L	G	V	D	I	D	N	L	L	V	S	Q	P	D	H	G	E	Q	A	L	E	I	A	D	M	L	V	R	S	G	A	I	D	L
NTDB id 1205 PSJM300 05545 AFN77183.1	I	V	E	I	Y	G	P	E	S	S	G	K	T	T	L	T	L	S	V	I	A	A	A	Q	R	M	G	S	T	C	A	F	V	D	A	E	H	A	L	D	P	Y	A	G	K	L	G	V	N	V	D	L	L	V	S	Q	P	D	T	G	E	Q	A	L	E	I	T	D	M	L										





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NTDB id 600 KW2 RS01765 WP 011675413.1	AYNDEKIGQGA	EKAKNYLKEHQ	DVFD	DEIDHKVRAAHG	LDDSEVAETEET	TASKTKAKAKKEEKAVETEEIELELED..	387	
NTDB id 269 KZH43 RS08665 WP 001085462.1	SYKDEKIGQGS	ENAKKYLAEHPE	IFDE	IDKQVRSKFG	LIDGEEVSEQD	TENKKDE...PKKEEA..VNEEVPLDLGDEL	382	
NTDB id 228 SPD RS09265 WP 001085462.1	SYKDEKIGQGS	ENAKKYLAEHPE	IFDE	IDKQVRSKFG	LIDGEEVSEQD	TENKKDE...PKKEEA..VNEEVPLDLGDEL	382	
NTDB id 194 SPR RS08825 WP 001085462.1	SYKDEKIGQGS	ENAKKYLAEHPE	IFDE	IDKQVRSKFG	LIDGEEVSEQD	TENKKDE...PKKEEA..VNEEVPLDLGDEL	382	
NTDB id 159 SP RS09750 WP 001085462.1	SYKDEKIGQGS	ENAKKYLAEHPE	IFDE	IDKQVRSKFG	LIDGEEVSEQD	TENKKDE...PKKEEA..VNEEVPLDLGDEL	382	
NTDB id 499 SM12261 RS08315 WP 078228268.1	SYKDEKIGQGS	ENAKKYLADNPE	IFDE	IDHQVVRVQFG	LIDGEEIAES...	KKDE...AAQVDS..VNEEVTLDLGDEL	378	
NTDB id 527 SMSK321 RS11065 WP 001085454.1	SYKDEKIGQGS	ENAKKYLADNPE	VFAE	IDHQVVRVQFG	LIDGEEAAES...	KKDE...VAQVDS..VNEEVTLDLGDEL	378	
NTDB id 453 Spy49 1753c ACI62003.1	SYNGEKIGQGS	ENAKRYLADHP	QLFDE	IDRKVVRVKFG	LEESEEEESAM	AVASE.....E.....TDDLALDLNGI	374	
NTDB id 408 SMU RS09530 WP 002262392.1	SYNGEKIGQGS	ENAKKFLADNPE	IFDD	IDHKVVRVQYGL	IEEDNTEEKQ	SSKEK.....ETDEK..ADKNLVLELDDTI	379	
NTDB id 115 BSU 16940 NP 389576.2	SYEEERLGGG	RENAKQFLKEN	KDIM	LMIQEQ	IREHYGLD	NNGVVQQAEETQEEL.EFE.E.....	348	
NTDB id 625 LCA RS02525 WP 011374196.1	SYGSERIGGG	RENAKNYLADH	EDVE	DEVRLKVR	AAYGIS	SDVPEEDLPTTEDE.QI.NILPDDST.....EE.....	355	
NTDB id 1313 DR RS12030 WP 010888966.1	SYGDERIGGG	KEKTIA	YTAER	PEMEQE	IRDRVMAA	IRAGNAGEAPALAPAPAAPEAAEA.....	363	
NTDB id 36077 ECHVI RS00205 WP 015263915.1	SYDGNKLGQ	GRDAVKNLL	LDNPE	LMELEV	KIKAKA	GLGGEVEE.....EAVKE.....	342	
NTDB id 1334 RAOC RS04870 WP 004918236.1	SYQDTKLGQ	GRDITV	KELIK	DNPELA	EELAKI	REKLQAK.....	343	
NTDB id 1245 Cj1673c YP 002345041.1	SYKDKKLGQ	GRENSKAF	LKENPE	IADE	ITKAI	QNSMGT	EGMISG.....SEDDE..GEE.....	343
NTDB id 1211 C694 RS00795 WP 000963128.1	SYQDKKLGQ	GRENAKALL	KEDKAL	ADE	ITLKI	KESIGS	NEEIMP.....LPDEP..LEEME.....	347
NTDB id 1214 NCTC11637 00359 SQJ03206.1	SYQDKKLGQ	GRENAKALL	KEDKAL	ADE	ITLKI	KESIGS	NEEIMP.....LPDEP..LEEME.....	347
NTDB id 1389 A4U84 RS07560 WP 021112712.1	SYDGTKIGQ	GKNNAVK	WLKENPE	IA	DKLEQ	EIRNTLAS	NPNSVL.....KATASDSNDESD..VEEFSEEL.....	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	SYNGAKIGQ	GKDNVRV	WLKENPE	IS	DE	IDAKIRAL	NGVEMHITE.....GTQDET.....GERPEE.....	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	SYNGAKIGQ	GKDNVRV	WLKENPE	IS	DE	IDAKIRAL	NGVEMHITE.....GTQDET.....GERPEE.....	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	SYNGAKIGQ	GKDNVRV	WLKENPE	IS	DE	IDAKIRAL	NGVEMHITE.....GTQDET.....GERPEE.....	348
NTDB id 1427 RS RS02760 WP 011000510.1	SYNGERIGQ	GRDNC	REFL	RENAEL	ARE	IENKVR	REHLGVTPMGAV.....TLAEEVEED.....	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	SYNGDKIGQ	GKANACKY	LKENPE	IAKT	LDK	KLREML	LNPNMQL.....IAETSSAADDVE..FGAVPEEF.....	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	SYNGDKIGQ	GKANACKY	LKENPE	IAKT	LDK	KLREML	LNPNMQL.....IAETSSAADDVE..FGAVPEEF.....	354
NTDB id 1074 ABD1 RS10195 WP 000344167.1	SYQGNKIGQ	GKNNVIRY	FEENN	QIA	EIE	ERNIRE	QLLTTGTNGA....VQ.I.EDEEPE...LLES.....	349
NTDB id 1022 ACIAD RS06390 WP 004925639.1	SYQGNKIGQ	GKNNVIRY	LEENP	QI	STE	EIAVIRE	QLLTKASDQT....AA.HDETEEPE...LLES.....	349
NTDB id 1205 PSJM300 05545 AFN77183.1	AYKGSKIGQ	GKANAAKY	LEENPE	IG	QIE	EQQIR	AKLLVTSANTK....ATPVAEDLADAD....I.....	347
consensus	*!	**!!!*****	**	*****	*****	**	**	

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	E I E I E E	
NTDB id 600 KW2 RS01765 WP 011675413.1	.....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	EIEIEE	388
NTDB id 228 SPD RS09265 WP 001085462.1	EIEIEE	388
NTDB id 194 SPR RS08825 WP 001085462.1	EIEIEE	388
NTDB id 159 SP RS09750 WP 001085462.1	EIEIEE	388
NTDB id 499 SM12261 RS08315 WP 078228268.1	EIEIEE	384
NTDB id 527 SMSK321 RS11065 WP 001085454.1	EIEIEE	384
NTDB id 453 Spy49 1753c ACI62003.1	EIED..	378
NTDB id 408 SMU RS09530 WP 002262392.1	ELED..	383
NTDB id 115 BSU 16940 NP 389576.2	.....	348
NTDB id 625 LCA RS02525 WP 011374196.1	.....	355
NTDB id 1313 DR RS12030 WP 010888966.1	.....	363
NTDB id 36077 ECHVI RS00205 WP 015263915.1	.....	342
NTDB id 1334 RAOC RS04870 WP 004918236.1	.....	343
NTDB id 1245 Cj1673c YP 002345041.1	.....	343
NTDB id 1211 C694 RS00795 WP 000963128.1	.....	347
NTDB id 1214 NCTC11637 00359 SQJ03206.1	.....	347
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.....	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	.....	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	.....	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	.....	348
NTDB id 1427 RS RS02760 WP 011000510.1	.....	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	.....	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	.....	354
NTDB id 1074 ABD1 RS10195 WP 000344167.1	.....	349
NTDB id 1022 ACIAD RS06390 WP 004925639.1	.....	349
NTDB id 1205 PSJM300 05545 AFN77183.1	.....	347

consensus

-  non conserved
-  similar
-  ≥ 50% conserved