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NTDB id 600 KW2 RS01765 WP 011675413.1	MATKK...KTNFDDITKKYGA	ERDKALADALALIEKDFGKGSIMRLG	EA	ANQK	VS	VSSGSLALDIALGAGGYPKGR	74																																	
NTDB id 269 KZH43 RS08665 WP 001085462.1	.MAKK...PKKLEEISKKFGA	EREKALNDALKLEKDFGKGSIMRLG	ER	AEQK	VQVMSSGSLALDIALGSGGYPKGR	73																																		
NTDB id 228 SPD RS09265 WP 001085462.1	.MAKK...PKKLEEISKKFGA	EREKALNDALKLEKDFGKGSIMRLG	ER	AEQK	VQVMSSGSLALDIALGSGGYPKGR	73																																		
NTDB id 194 SPR RS08825 WP 001085462.1	.MAKK...PKKLEEISKKFGA	EREKALNDALKLEKDFGKGSIMRLG	ER	AEQK	VQVMSSGSLALDIALGSGGYPKGR	73																																		
NTDB id 159 SP RS09750 WP 001085462.1	.MAKK...PKKLEEISKKFGA	EREKALNDALKLEKDFGKGSIMRLG	ER	AEQK	VQVMSSGSLALDIALGSGGYPKGR	73																																		
NTDB id 527 SMSK321 RS11065 WP 001085454.1	.MAKK...PKKLDEISKKFGA	EREKALNDALKLEKDFGKGSIMRLG	ER	AEQK	VQVMSSGSLALDIALGSGGYPKGR	73																																		
NTDB id 499 SM12261 RS08315 WP 078228268.1	.MAKK...PKKLDEISKKFGA	EREKALNDALKLEKDFGKGSIMRLG	ER	AEQK	VQVMSSGSLALDIALGSGGYPKGR	73																																		
NTDB id 408 SMU RS09530 WP 002262392.1	.MAKR...IKKTEEITKKFGD	ERRKALDDALKNIEKDFGKGAVMRLG	ER	AEQK	VQVMSSGSLALDIALGAGGYPKGR	73																																		
NTDB id 453 Spy49 1753c ACI62003.1	.MAKK...LKKNEEITKKFGD	ERRKALDDALKNIEKDFGKGAVMRLG	ER	AEQK	VQVMSSGSLALDIALGAGGYPKGR	73																																		
NTDB id 625 LCA RS02525 WP 011374196.1	.....MAKD	ERQAALDAALKKIEKNFGKGSIMRMGEK	ER	VDTQ	VSTVSSGSLALDEALGVGGYPRGR	60																																	
NTDB id 364816 BPGQ101 RS08900 WP 138278534.1	.....MS	DRQAALDMALKQIEKQFGRG	ER	TDTR	ISTVPSGSLALDTALGIGGYPGR	58																																	
NTDB id 115 BSU 16940 NP 389576.2	.....MS	DRQAALDMALKQIEKQFGRG	ER	TDTR	ISTVPSGSLALDTALGIGGYPGR	58																																	
NTDB id 1313 DR RS12030 WP 010888966.1	.....MSKDATKEISAPTD	ERSKATETAMSQIEKAFGKGSIMKLGAE	ER	SKLD	VQVSTGSLSLDLALGVGGIPRGR	72																																	
NTDB id 1245 Cj1673c YP 002345041.1	.....MDDN	KRKSLSLDAALKSLDKTFGKGTILRLGDK	ER	EVEQ	IDSIGTGSVGLDLALGIGGVPKGR	59																																	
NTDB id 1211 C694 RS00795 WP 000963128.1	.....MAIDE	DKQKATSLAIKQIDKVFGKCALVRLGDK	ER	QVEK	IDSISTGSLGLDLALGIGGVPKGR	61																																	
NTDB id 1214 NCTC11637 00359 SQJ03206.1	.....MAIDE	DKQKATSLAIKQIDKVFGKCALVRLGDK	ER	QVEK	IDAISTGSLGLDLALGIGGVPKGR	61																																	
NTDB id 1334 RAOC RS04870 WP 004918236.1MAKT	..ETTSPND	DKK	KALAAVLEK	LDKTYGKGTVMKLG	GTVDHNI	EV	IP	SGSLGLDLALGVGGYPKGR	68																														
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.MAENKKSSKNNTV	.VKQVEPEQ	KKQ	ALEAALA	QIEKQF	FGKGSIMKLG	QT	EQ	LD	IESV	STGSLGLDLALGIGGLPMGR	76																												
NTDB id 1130 NGFG RS03960 WP 003688695.1MSD	DKSKALAAALA	QIEK	SFGKGA	IMKMDGS	QREEN	LE	V	I	S	TGSLGLDLALGVGGLPRGR	60																												
NTDB id 1124 NGFG RS03960 WP 003688695.1MSD	DKSKALAAALA	QIEK	SFGKGA	IMKMDGS	QREEN	LE	V	I	S	TGSLGLDLALGVGGLPRGR	60																												
NTDB id 1123 OK783 RS03845 WP 003688695.1MSD	DKSKALAAALA	QIEK	SFGKGA	IMKMDGS	QREEN	LE	V	I	S	TGSLGLDLALGVGGLPRGR	60																												
NTDB id 1427 RS RS02760 WP 011000510.1	.MEDG.....K	.KAASMSA	EKQ	KALAAALA	QIEKQF	FGKGSIMKMG	DA	E	V	E	P	V	V	S	T	G	S	L	G	L	D	V	A	L	G	V	G	G	L	P	R	G	R	68						
NTDB id 1165 A1552VC RS01565 WP 000344154.1MDEN	KKALAAALG	QIEKQF	FGKGSIM	R	L	G	D	N	R	A	M	V	E	T	S	T	G	S	L	S	L	D	I	A	L	G	A	G	G	L	P	M	G	R	59				
NTDB id 1142 GTF74 RS11550 WP 000344154.1MDEN	KKALAAALG	QIEKQF	FGKGSIM	R	L	G	D	N	R	A	M	V	E	T	S	T	G	S	L	S	L	D	I	A	L	G	A	G	G	L	P	M	G	R	59				
NTDB id 1074 ABD1 RS10195 WP 000344167.1MDEN	KSKALQAALS	QIEKQF	GKNT	V	M	R	L	G	D	N	T	V	Q	A	V	E	A	V	S	T	G	S	L	T	L	D	I	A	L	G	I	G	G	L	P	K	G	R	59
NTDB id 1022 ACIAD RS06390 WP 004925639.1MDDN	KSKALQAALS	QIEKQF	GKNT	V	M	R	L	G	D	N	T	V	Q	A	V	E	A	V	S	T	G	S	L	T	L	D	I	A	L	G	I	G	G	L	P	K	G	R	59
NTDB id 1205 PSJM300 05545 AFN77183.1MDEN	KKALAAALG	QIEKQF	FGKGA	V	M	R	M	G	D	H	D	R	Q	A	I	P	S	I	S	T	G	S	L	G	L	D	I	A	L	G	I	G	G	L	P	K	G	R	59
consensus		** **	**	***!	*!*****	*	***!***!***!***!***!***!																																	

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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 E Y A K A L G V N I D E L L S Q P D Y G E Q G L Q I A E K L I T S G A V D L	154
NTDB id 269 KZH43 RS08665 WP 001085462.1	I I E I Y G P E S S G K T T V A L H A V A A Q A Q K E G G I A A F I D A E H A L D P A Y A A A L G V N I D E L L S Q P D S G E Q G L E I A G K L I D S G A V D L	153
NTDB id 228 SPD RS09265 WP 001085462.1	I I E I Y G P E S S G K T T V A L H A V A A Q A Q K E G G I A A F I D A E H A L D P A Y A A A L G V N I D E L L S Q P D S G E Q G L E I A G K L I D S G A V D L	153
NTDB id 194 SPR RS08825 WP 001085462.1	I I E I Y G P E S S G K T T V A L H A V A A Q A Q K E G G I A A F I D A E H A L D P A Y A A A L G V N I D E L L S Q P D S G E Q G L E I A G K L I D S G A V D L	153
NTDB id 159 SP RS09750 WP 001085462.1	I I E I Y G P E S S G K T T V A L H A V A A Q A Q K E G G I A A F I D A E H A L D P A Y A A A L G V N I D E L L S Q P D S G E Q G L E I A G K L I D S G A V D L	153
NTDB id 527 SMSK321 RS11065 WP 001085454.1	I I E I Y G P E S S G K T T V A L H A V A A Q A Q K E G G I A A F I D A E H A L D P A Y A A A L G V N I D E L L S Q P D S G E Q G L E I A G K L I D S G A V D L	153
NTDB id 499 SM12261 RS08315 WP 078228268.1	I I E I Y G P E S S G K T T V A L H A V A A Q A Q K E G G I A A F I D A E H A L D P A Y A A A L G V N I D E L L S Q P D S G E Q G L E I A G K L I D S G A V D L	153
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 Q A Q K D G G I A A F I D A E H A L D P A Y A A A L G V N I D E L L S Q P D S G E Q G L E I A G K L I D S G A V D L	153
NTDB id 453 Spy49 1753c ACI62003.1	I I E I Y G P E S S G K T T V A L H A V A A Q A Q K E G G I A A F I D A E H A L D P A Y A A A L G V N I D E L L A Q P D S G E Q G L E I A G K L I D S G A V D L	153
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	140
NTDB id 364816 BPGQ101 RS08900 WP 138278534.1	I I 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 Q A A F I D A E H A L D P V Y A Q K L G V N I D 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	138
NTDB id 115 BSU 16940 NP 389576.2	I I 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 Q 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	138
NTDB id 1313 DR RS12030 WP 010888966.1	I T E I Y G P E S 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	152
NTDB id 1245 Cj1673c YP 002345041.1	I I 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	139
NTDB id 1211 C694 RS00795 WP 000963128.1	I I 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 T 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	141
NTDB id 1214 NCTC11637 00359 SQJ03206.1	I I 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 T 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	141
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 E L I V S Q P D N G E Q A L E I A D S L I R S G G V D I	148
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 I S Q P D N G E Q A L E I C D A L V R S G A V D V	156
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	140
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	140
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	140
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 I S Q P D T G E Q A L E I A D A L V R S G S V D L	148
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	139
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	139
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	139
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	139
NTDB id 1205 PSJM300 05545 AFN77183.1	I V E I Y G P E S S G K T T I 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 D Y A G K L G V N V D D L L V S Q P D T G E Q A L E I T D M L V R S N A V D V	139
consensus	**!*!!!!!!*!!!!* ! **! !* ** !*!!!!!!*!! !!!!!*!!!!*!! !!!!!*!!!!*!! *!!!!*!!!!*	

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NTDB id 600 KW2 RS01765 WP 011675413.1	DEKIGQGAEKAKNYLKEHQDVFEIDHKVRAAHGLDDSEVAETEEETTASHTKAKAKKEEKAVETEEIELELED....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	DEKIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGLDGEEVSEQDTENKKDE...PKKEEA..VNEEVPLDLGDELEIE	385
NTDB id 228 SPD RS09265 WP 001085462.1	DEKIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGLDGEEVSEQDTENKKDE...PKKEEA..VNEEVPLDLGDELEIE	385
NTDB id 194 SPR RS08825 WP 001085462.1	DEKIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGLDGEEVSEQDTENKKDE...PKKEEA..VNEEVPLDLGDELEIE	385
NTDB id 159 SP RS09750 WP 001085462.1	DEKIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGLDGEEVSEQDTENKKDE...PKKEEA..VNEEVPLDLGDELEIE	385
NTDB id 527 SMSK321 RS11065 WP 001085454.1	DEKIGQGSSENAKKYLADNPEVFAEIDHQVVRVQFGLIDGEEAAE...SKKDE...VAQVDS..VNEEVTLDLGDELEIE	381
NTDB id 499 SM12261 RS08315 WP 078228268.1	DEKIGQGSSENAKKYLADNPEIFDEIDHQVVRVQFGLIDGEEIAE...SKKDE...AAQVDS..VNEEVTLDLGDELEIE	381
NTDB id 408 SMU RS09530 WP 002262392.1	GEKIGQGSSENAKKFLADNPEIFDDIDHKVVRVQYGLIEEDNTEEKQSSKEK.....ETDEK..ADKNLVLELDDTIELE	382
NTDB id 453 Spy49 1753c ACI62003.1	GEKIGQGSSENAKRYLADHPQLFDEIDRKRVRVKFGLLEESEESAMAVASE.....E.....TDDLALDLNGIEIE	377
NTDB id 625 LCA RS02525 WP 011374196.1	SERIGQGRSENAKXNYLADHEDVEDEVRLKVRVRAAYGISDVPEEDLPTTEDEQINILPDDSTEE.....	355
NTDB id 364816 BPGQ101 RS08900 WP 138278534.1	EERLGGGRENAKQFLKENKDILLMIQEQTREHYGLDTNGVKSTD.EEGQEELELND.....	347
NTDB id 115 BSU 16940 NP 389576.2	EERLGGGRENAKQFLKENKDILLMIQEQTREHYGLDNNGVVQQAEETQEELEFEE.....	348
NTDB id 1313 DR RS12030 WP 010888966.1	DERIGQGGKEKTIAYIAERPMEQEIRDRVMAAIRAGNAGEAPALAPAPAPEAAEA.....	363
NTDB id 1245 Cj1673c YP 002345041.1	DKKLGQGRENSKAFLENPEIADIEITKAIQNSMGIEMMI.....SGSEDDE..GEE.....	343
NTDB id 1211 C694 RS00795 WP 000963128.1	DKKLGQGRENAKALLKEDKALADEITLKIKESIGSNEEI.....MPLPDEP..LEEME.....	347
NTDB id 1214 NCTC11637 00359 SQJ03206.1	DKKLGQGRENAKALLKEDKALADEITLKIKESIGSNEEI.....MPLPDEP..LEEME.....	347
NTDB id 1334 RAOC RS04870 WP 004918236.1	DTKLGQGRDTRVKELEIKDNPELAEELEAKIREKLQAK.....	343
NTDB id 1389 A4U84 RS07560 WP 021112712.1	GTKIGQGGKNNAVKWLKENPEIADKLEQEIIRNTLASNPNS.....VLKATASDSNDESVDVEE..FSEEEL.....	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	GAKIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI.....TEGTQDET.....GE..RPEE.....	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	GAKIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI.....TEGTQDET.....GE..RPEE.....	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	GAKIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI.....TEGTQDET.....GE..RPEE.....	348
NTDB id 1427 RS RS02760 WP 011000510.1	GERIGQGRDNCREFLRENAELAREIENKVRHLGVTPMG....AV.TLAEVEEED.....	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	GDKIGQGGKANACKYLKENPEIAKTLDKKLRREMLLNPNM.....QLIAETSSAADDVEFGA..VPEEF.....	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	GDKIGQGGKANACKYLKENPEIAKTLDKKLRREMLLNPNM.....QLIAETSSAADDVEFGA..VPEEF.....	354
NTDB id 1074 ABD1 RS10195 WP 000344167.1	GNKIGQGGKNNVIRYFEENNQIAEEIERNIREQLLTTGTN....GAVQ.I.EDEEEDP..L..LLES.....	349
NTDB id 1022 ACIAD RS06390 WP 004925639.1	GNKIGQGGKNNVIRYLEENPQISTEIEAVIREQLLTKASD....QTAA.HDETEEEDP..L..LES.....	349
NTDB id 1205 PSJM300 05545 AFN77183.1	GSKIGQGGKANAAKYLEENPEIGQEIEQQIRAKLLVTSAN....TKATPVAEDLADAD..I.....	347
consensus	**!!!***** ** ***** ***** ** *	

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NTDB id 600 KW2 RS01765 WP 011675413.1	...	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	IEE	388
NTDB id 228 SPD RS09265 WP 001085462.1	IEE	388
NTDB id 194 SPR RS08825 WP 001085462.1	IEE	388
NTDB id 159 SP RS09750 WP 001085462.1	IEE	388
NTDB id 527 SMSK321 RS11065 WP 001085454.1	IEE	384
NTDB id 499 SM12261 RS08315 WP 078228268.1	IEE	384
NTDB id 408 SMU RS09530 WP 002262392.1	D..	383
NTDB id 453 Spy49 1753c ACI62003.1	D..	378
NTDB id 625 LCA RS02525 WP 011374196.1	...	355
NTDB id 364816 BPGQ101 RS08900 WP 138278534.1	...	347
NTDB id 115 BSU 16940 NP 389576.2	...	348
NTDB id 1313 DR RS12030 WP 010888966.1	...	363
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 1334 RAOC RS04870 WP 004918236.1	...	343
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