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NTDB id 600 KW2 RS01765 WP 011675413.1	MATKKKT....NFDDITKKYGA	ERDKALADALALIEKD	FGKGSIMRLGEA	.ANQKVS	VSSGSLALDI	ALGAGGYPKGR	74	
NTDB id 269 KZH43 RS08665 WP 001085462.1	.MAKKPK....KLEEISKKFGA	EREKALNDALKLEKD	FGKGSIMRLGER	.AEQKVQVMSSGSLALDI	ALGSGGYPKGR	73		
NTDB id 228 SPD RS09265 WP 001085462.1	.MAKKPK....KLEEISKKFGA	EREKALNDALKLEKD	FGKGSIMRLGER	.AEQKVQVMSSGSLALDI	ALGSGGYPKGR	73		
NTDB id 194 SPR RS08825 WP 001085462.1	.MAKKPK....KLEEISKKFGA	EREKALNDALKLEKD	FGKGSIMRLGER	.AEQKVQVMSSGSLALDI	ALGSGGYPKGR	73		
NTDB id 159 SP RS09750 WP 001085462.1	.MAKKPK....KLEEISKKFGA	EREKALNDALKLEKD	FGKGSIMRLGER	.AEQKVQVMSSGSLALDI	ALGSGGYPKGR	73		
NTDB id 527 SMSK321 RS11065 WP 001085454.1	.MAKKPK....KLDEISKKFGA	EREKALNDALKLEKD	FGKGSIMRLGER	.AEQKVQVMSSGSLALDI	ALGSGGYPKGR	73		
NTDB id 499 SM12261 RS08315 WP 078228268.1	.MAKKPK....KLDEISKKFGA	EREKALNDALKLEKD	FGKGSIMRLGER	.AEQKVQVMSSGSLALDI	ALGSGGYPKGR	73		
NTDB id 453 Spy49 1753c ACI62003.1	.MAKKLK....KNEEITKKFGD	ERRKALDDALKNIEKD	FGKGAVMRLGER	.AEQKVQVMSSGSLALDI	ALGAGGYPKGR	73		
NTDB id 408 SMU RS09530 WP 002262392.1	.MAKRIK....KTEEITKKFGD	ERRKALDDALKNIEKD	FGKGAVMRLGER	.AEQKVQVMSSGSLALDI	ALGAGGYPKGR	73		
NTDB id 115 BSU 16940 NP 389576.2	.....MS	DRQAALDMALKQIEKQ	FGKGSIMKLGEK	.TDTRI	ISTVPSGSLALDI	TALGIGGYPRGR	58
NTDB id 625 LCA RS02525 WP 011374196.1	.....MAKD	ERQAALDAALKKIEKN	FGKGSIMRMGEK	.VDTQVSTVSSGSLALDE	ALGVGGYPRGR	60	
NTDB id 1313 DR RS12030 WP 010888966.1	.....MSKDATKEISAPTD	AKERSKATETAM	IEKAFGKGSIMKLGAE	.SKLDVQV	VSTGSLSLDL	ALGVGGIPRGR	72
NTDB id 28336 LBYS RS00480 WP 013406946.1	.....MAAENA	DKLKILQSTLDDK	LDKSF	FGKGTVMRLSDTKV	.LDVPVISTGSLGLDL	ALGVNGLPKGR	62
NTDB id 1334 RAOC RS04870 WP 004918236.1MAKTE	.TTSPND	DKKKALAAVLEKLDK	TYGKGTVMKLG	DGTVDHNI	IEVIPSGSLGLDL	ALGVGGYPRGR	68
NTDB id 1245 Cj1673c YP 002345041.1MDDN	KRKS	SLDAALKS	LDKTF	FGKGTILRLGDK	.EVEQIDSIGTGSVGLDL	ALGIGGVPKGR	59
NTDB id 1214 NCTC11637 00359 SQJ03206.1MAIDE	DKQKATISLAIKQ	IDKV	FGKGA	LVRLGDK	.QVEKIDAISTGSLGLDL	ALGIGGVPKGR	61
NTDB id 1211 C694 RS00795 WP 000963128.1MAIDE	DKQKATISLAIKQ	IDKV	FGKGA	LVRLGDK	.QVEKIDSISTGSLGLDL	ALGIGGVPKGR	61
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.MAENKSSKNNTVV..KQVEPEQ	KKQALEAALAQIEKQ	FGKGSIMKLGQT	.EQLDI	ESVSTGSLGLDL	ALGIGGLPMGR	76	
NTDB id 1130 NGFG RS03960 WP 003688695.1MSD	DKSKALAAALAQIEKS	FGKGA	IMKMDGSQ	QEEENLEVI	ISTGSLGLDL	ALGVGGLPRGR	60
NTDB id 1124 NGFG RS03960 WP 003688695.1MSD	DKSKALAAALAQIEKS	FGKGA	IMKMDGSQ	QEEENLEVI	ISTGSLGLDL	ALGVGGLPRGR	60
NTDB id 1123 OK783 RS03845 WP 003688695.1MSD	DKSKALAAALAQIEKS	FGKGA	IMKMDGSQ	QEEENLEVI	ISTGSLGLDL	ALGVGGLPRGR	60
NTDB id 1427 RS RS02760 WP 011000510.1	.MEDG.....KK..AASMSA	EKQKALAAALAQIEKQ	FGKGSIMKMGDA	.EVEPVQV	VSTGSLGLD	VALGVGGLPRGR	68	
NTDB id 1165 A1552VC RS01565 WP 000344154.1	.....MDEN	KKALAAALGQIEKQ	FGKGSIMRLGDN	.RAMDVET	ISTGSLSLDI	ALGAGGLPMGR	59
NTDB id 1142 GTF74 RS11550 WP 000344154.1	.....MDEN	KKALAAALGQIEKQ	FGKGSIMRLGDN	.RAMDVET	ISTGSLSLDI	ALGAGGLPMGR	59
NTDB id 1022 ACIAD RS06390 WP 004925639.1	.....MDDN	KSALQAALSQIEKQ	FGKNTVMRLGDN	.TVQAVEA	VSTGSLTLDI	ALGIGGLPKGR	59
NTDB id 1074 ABD1 RS10195 WP 000344167.1	.....MDEN	KSALQAALSQIEKQ	FGKNTVMRLGDN	.TVQAVEA	VSTGSLTLDI	ALGIGGLPKGR	59
NTDB id 1205 PSJM300 05545 AFN77183.1MDEN	KKRALAAALGQIEKQ	FGKGAVMRMGDH	.DRQAIPS	ISTGSLGLDI	ALGIGGLPKGR	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	Y	A	K	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	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	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	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	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	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	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	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 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	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 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	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 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	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 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 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	152
NTDB id 28336 LBYS RS00480 WP 013406946.1	V	I	E	I	Y	G	P	E	S	S	G	K	T	T	L	A	M	H	A	I	A	E	A	Q	K	Q	G	G	I	A	A	F	I	D	A	E	H	A	F	D	R	V	Y	A	E	K	L	I	D	T	K	N	L	I	S	Q	P	D	Y	G	E	Q	A	L	E	I	A	E	H	L	I	A	S	G	A	I	D	I	142		
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	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	148			
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 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 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 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	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 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 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 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</																																			

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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	E	I	E	I	E	E	388
NTDB id 228 SPD RS09265 WP 001085462.1	E	I	E	I	E	E	388
NTDB id 194 SPR RS08825 WP 001085462.1	E	I	E	I	E	E	388
NTDB id 159 SP RS09750 WP 001085462.1	E	I	E	I	E	E	388
NTDB id 527 SMSK321 RS11065 WP 001085454.1	E	I	E	I	E	E	384
NTDB id 499 SM12261 RS08315 WP 078228268.1	E	I	E	I	E	E	384
NTDB id 453 Spy49 1753c ACI62003.1	E	I	E	D	.	.	378
NTDB id 408 SMU RS09530 WP 002262392.1	E	L	E	D	.	.	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 28336 LBYS RS00480 WP 013406946.1	.	.	.	.	.	.	346
NTDB id 1334 RAOC RS04870 WP 004918236.1	.	.	.	.	.	.	343
NTDB id 1245 Cj1673c YP 002345041.1	.	.	.	.	.	.	343
NTDB id 1214 NCTC11637 00359 SQJ03206.1	.	.	.	.	.	.	347
NTDB id 1211 C694 RS00795 WP 000963128.1	.	.	.	.	.	.	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 1022 ACIAD RS06390 WP 004925639.1	.	.	.	.	.	.	349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	.	.	.	.	.	.	349
NTDB id 1205 PSJM300 05545 AFN77183.1	.	.	.	.	.	.	347

consensus

-  non conserved
-  similar
-  ≥ 50% conserved