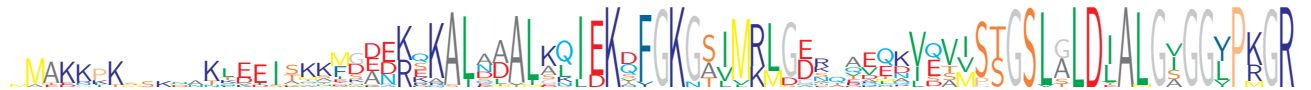


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NTDB id 600 KW2 RS01765 WP 011675413.1	MATKKKT....NFDDITKKYGA	ERDKALADALALIEKD	FGKGSIMRLGER	.ANQKVS	VSSGSLALDI	ALGAGGYPKGR	74	
NTDB id 269 KZH43 RS08665 WP 001085462.1	.MAKKPK....KLEEISKKFGA	EREKALNDALKLEKD	FGKGSIMRLGER	.AEQKVQVMSSGSLALDI	ALGSGGYPKGR	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 499 SM12261 RS08315 WP 078228268.1	.MAKKPK....KLDEISKKFGA	EREKALNDALKLEKD	FGKGSIMRLGER	.AEQKVQVMSSGSLALDI	ALGSGGYPKGR	73		
NTDB id 527 SMSK321 RS11065 WP 001085454.1	.MAKKPK....KLDEISKKFGA	EREKALNDALKLEKD	FGKGSIMRLGER	.AEQKVQVMSSGSLALDI	ALGSGGYPKGR	73		
NTDB id 453 Spy49 1753c ACI62003.1	.MAKKLK....KNEEITKKFG	DERKALDDALKNIEKD	FGKGAVMRLGER	.AEQKVQVMSSGSLALDI	ALGAGGYPKGR	73		
NTDB id 408 SMU RS09530 WP 002262392.1	.MAKRIK....KTEEITKKFG	DERKALDDALKNIEKD	FGKGAVMRLGER	.AEQKVQVMSSGSLALDI	ALGAGGYPKGR	73		
NTDB id 115 BSU 16940 NP 389576.2	.....MSDRQAALDMALKQ	IEKQFGKGSIMKLG	EK.TDTR	ISTVPSGSLALDI	TALGIGGYPKGR	58		
NTDB id 625 LCA RS02525 WP 011374196.1	.....MAKDERQAALDAALKK	IEKNFGKGSIMRM	GK.VDTQVSTVSSGSLALDE	ALGVGGYPKGR	60			
NTDB id 1313 DR RS12030 WP 010888966.1	.....MSKDATKEISAPTD	AKERSKATETAM	SQIEKAFGKGSIMKLGAE	.SKLDVQVVSTGSLSLDL	ALGVGGIPKGR	72		
NTDB id 358750 FAF07 RS07010 WP 142784426.1	.....MGNEKEAKLKALKLTL	LDKLDKAYGKGTVMKMS	DSAV.VDVEA	IPSGSLGLDI	AMGVGGYPKGR	62		
NTDB id 1334 RAOC RS04870 WP 004918236.1	.....MAKTE..TTSPNDDKKK	KALAAVLEKLDKTYGKGTVMK	LDGTVDHNIEV	IPSGSLGLDL	ALGVGGYPKGR	68		
NTDB id 1245 Cj1673c YP 002345041.1	.....MDNKRKSLDAALKS	LDKTFGKGTILRLGDK	.EVEQIDS	IGTGSVGLDL	ALGIGGVPKGR	59		
NTDB id 1214 NCTC11637 00359 SQJ03206.1	.....MAIDEDKQKATISLAI	IKQIDKVF	FGKGA	LVRLGDK.QVEKIDA	ISTGSLGLDL	ALGIGGVPKGR	61	
NTDB id 1211 C694 RS00795 WP 000963128.1	.....MAIDEDKQKATISLAI	IKQIDKVF	FGKGA	LVRLGDK.QVEKIDS	ISTGSLGLDL	ALGIGGVPKGR	61	
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.MAENKSSKNNTVV..KQVEP	EKKQKALEAALAQIEKQ	FGKGSIMKLGQT	.EQLDIESVSTGSLGLDL	ALGIGGLPMGR	76		
NTDB id 1130 NGFG RS03960 WP 003688695.1	.....MSDDKSKALAAALAQ	IEKSF	FGKGA	IMKMDGSQ	QEEENLEVISTGSLGLDL	ALGVGGLPKGR	60	
NTDB id 1124 NGFG RS03960 WP 003688695.1	.....MSDDKSKALAAALAQ	IEKSF	FGKGA	IMKMDGSQ	QEEENLEVISTGSLGLDL	ALGVGGLPKGR	60	
NTDB id 1123 OK783 RS03845 WP 003688695.1	.....MSDDKSKALAAALAQ	IEKSF	FGKGA	IMKMDGSQ	QEEENLEVISTGSLGLDL	ALGVGGLPKGR	60	
NTDB id 1427 RS RS02760 WP 011000510.1	.MEDG.....KK..AASMSA	EKKKALAAALAQIEKQ	FGKGSIMKMGDA	.EVEPVQVVSTGSLGLD	VALGVGGLPKGR	68		
NTDB id 1165 A1552VC RS01565 WP 000344154.1	.....MDENKQKALAAALGQ	IEKQFGKGSIMRLG	DN.RAMDVET	ISTGSLSLDI	ALGAGGLPMGR	59		
NTDB id 1142 GTF74 RS11550 WP 000344154.1	.....MDENKQKALAAALGQ	IEKQFGKGSIMRLG	DN.RAMDVET	ISTGSLSLDI	ALGAGGLPMGR	59		
NTDB id 1074 ABD1 RS10195 WP 000344167.1	.....MDENKSKALQAALSQ	IEKQFGKNTVMRLG	DN.TVQAVEAVSTGSL	TLDI	ALGIGGLPKGR	59		
NTDB id 1022 ACIAD RS06390 WP 004925639.1	.....MDNKS	KALQAALSQIEKQ	FGKNTVMRLG	DN.TVQAVEAVSTGSL	TLDI	ALGIGGLPKGR	59	
NTDB id 1205 PSJM300 05545 AFN77183.1	.....MDENK	KRALAAALGQIEKQ	FGKGA	VMRMGDH.DRQA	IPSI	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	E	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		
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	E	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	E	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	E	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	E	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	E	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	E	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	E	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	E	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	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 358750 FAF07 RS07010 WP 142784426.1	V	V	E	I	Y	G	P	E	S	S	G	K	T	T	L	T	L	H	A	I	A	E	A	Q	K	A	G	G	I	A	A	F	I	D	A	E	H	A	F	D	R	F	Y	A	E	K	L	G	V	D	I	D	N	L	I	S	Q	P	D	N	G	E	Q	A	L	E	I	T	D	N	L	I	R	S	G	A	I	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	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 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	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
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	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
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	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
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	V	R	S	N	A	V	D	V		

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 499 SM12261 RS08315 WP 078228268.1	IEE	384
NTDB id 527 SMSK321 RS11065 WP 001085454.1	IEE	384
NTDB id 453 Spy49 1753c ACI62003.1	D..	378
NTDB id 408 SMU RS09530 WP 002262392.1	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 358750 FAF07 RS07010 WP 142784426.1	...	333
NTDB id 1334 RAOC RS04870 WP 004918236.1	...	343
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NTDB id 1389 A4U84 RS07560 WP 021112712.1	...	372
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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