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NTDB id 600 KW2 RS01765 WP 011675413.1	VEIYGPESSGKTTVALHAVA	AAVQK	EGGI	AAFIDAENALDPEYAKALGVN	IDELLSQPDYGEQGLQIAEK	LITSGAVDLV	155
NTDB id 269 KZH43 RS08665 WP 001085462.1	IEIYGPESSGKTTVALHAVA	AQAQK	EGGI	AAFIDAETHALDPAYAAALGVN	IDELLSQPDSGEQGLEIAGKL	IDSGAVDLV	154
NTDB id 228 SPD RS09265 WP 001085462.1	IEIYGPESSGKTTVALHAVA	AQAQK	EGGI	AAFIDAETHALDPAYAAALGVN	IDELLSQPDSGEQGLEIAGKL	IDSGAVDLV	154
NTDB id 194 SPR RS08825 WP 001085462.1	IEIYGPESSGKTTVALHAVA	AQAQK	EGGI	AAFIDAETHALDPAYAAALGVN	IDELLSQPDSGEQGLEIAGKL	IDSGAVDLV	154
NTDB id 159 SP RS09750 WP 001085462.1	IEIYGPESSGKTTVALHAVA	AQAQK	EGGI	AAFIDAETHALDPAYAAALGVN	IDELLSQPDSGEQGLEIAGKL	IDSGAVDLV	154
NTDB id 499 SM12261 RS08315 WP 078228268.1	IEIYGPESSGKTTVALHAVA	AQAQK	EGGI	AAFIDAETHALDPAYAAALGVN	IDELLSQPDSGEQGLEIAGKL	IDSGAVDLV	154
NTDB id 527 SMSK321 RS11065 WP 001085454.1	IEIYGPESSGKTTVALHAVA	AQAQK	EGGI	AAFIDAETHALDPAYAAALGVN	IDELLSQPDSGEQGLEIAGKL	IDSGAVDLV	154
NTDB id 408 SMU RS09530 WP 002262392.1	VEIYGPESSGKTTVALHAVA	AQAQK	DGGI	AAFIDAETHALDPAYAAALGVN	IDELLSQPDSGEQGLEIAGKL	IDSGAVDLV	154
NTDB id 453 Spy49 1753c ACI62003.1	IEIYGPESSGKTTVALHAVA	AQAQK	EGGI	AAFIDAETHALDPAYAAALGVN	IDELLSQPDSGEQGLEIAGKL	IDSGAVDLV	154
NTDB id 115 BSU 16940 NP 389576.2	IEVYGPESSGKTTVALHAVA	AEVQQ	GGQA	AFIDAETHALDPVYAQKLGVN	IEELLSQPDTEGEQALEIAE	ALVRSGAVDIV	139
NTDB id 625 LCA RS02525 WP 011374196.1	VEIYGPESSGKTTVALHAVA	AEVQQ	GGTA	YIDAENAMDPKYATALGVN	IDELLSQPDTEGEQGLEIAD	ALVSSGAVDIV	141
NTDB id 1313 DR RS12030 WP 010888966.1	TEIYGPESSGKTTVALHAVA	AQAQK	AGGTC	AFIDAETHALDPVYARALGVN	TEELLSQPDNTEGEQALEI	EMELLVRSGAVDIV	153
NTDB id 1245 Cj1673c YP 002345041.1	IEIYGPESSGKTTVALHAVA	AEVQQ	GGTA	AFIDAETHALDPVYAKNLGVN	TDLYVVSQPDFTEGEQALEI	ETIARSGAVDIV	140
NTDB id 1211 C694 RS00795 WP 000963128.1	IEIYGPESSGKTTVALHAVA	AEVQQ	GGTA	AFIDAETHALDPVYAKNLGVN	TDLYVVSQPDFTEGEQALEI	ETIARSGAVDIV	142
NTDB id 1214 NCTC11637 00359 SQJ03206.1	IEIYGPESSGKTTVALHAVA	AEVQQ	GGTA	AFIDAETHALDPVYAKNLGVN	TDLYVVSQPDFTEGEQALEI	ETIARSGAVDIV	142
NTDB id 1334 RAOC RS04870 WP 004918236.1	VEIYGPESSGKTTVALHAVA	AEVQQ	GGTA	AFIDAETHALDPVYAKNLGVN	TDLYVVSQPDFTEGEQALEI	ETIARSGAVDIV	149
NTDB id 1130 NGFG RS03960 WP 003688695.1	VEIFGPESSGKTTVALHAVA	AQAQK	GGVCA	AFIDAETHALDPVYARKLGVK	VEELYLSQPDTEGEQALEI	CDTLVRSGGIDMV	141
NTDB id 1124 NGFG RS03960 WP 003688695.1	VEIFGPESSGKTTVALHAVA	AQAQK	GGVCA	AFIDAETHALDPVYARKLGVK	VEELYLSQPDTEGEQALEI	CDTLVRSGGIDMV	141
NTDB id 1123 OK783 RS03845 WP 003688695.1	VEIFGPESSGKTTVALHAVA	AQAQK	GGVCA	AFIDAETHALDPVYARKLGVK	VEELYLSQPDTEGEQALEI	CDTLVRSGGIDMV	141
NTDB id 58856 BRPE64 RS02235 WP 016344388.1	VEIYGPESSGKTTVALHAVA	AQAQK	GGTA	AFIDAETHALDPVYAGKLGVN	VQELLISQPDTEGEQALEI	ADALVRSGSIDMVI	151
NTDB id 1427 RS RS02760 WP 011000510.1	VEIYGPESSGKTTVALHAVA	AQAQK	GGTA	AFIDAETHALDPVYAGKLGVN	VQELLISQPDTEGEQALEI	ADALVRSGSIDMVI	149
NTDB id 1389 A4U84 RS07560 WP 021112712.1	VEIYGPESSGKTTVALHAVA	AQAQK	GNKTC	AFIDAETHALDPVYARNLGVN	TEELLSQPDNTEGEQALEI	CDALVRSGAVDIV	157
NTDB id 1165 A1552VC RS01565 WP 000344154.1	VEIFGPESSGKTTVALHAVA	IAAAQ	REGKTC	AFIDAETHALDPVYAKKLGVN	IDELLSQPDTEGEQALEI	CDALARSGAVDIV	140
NTDB id 1142 GTF74 RS11550 WP 000344154.1	VEIFGPESSGKTTVALHAVA	IAAAQ	REGKTC	AFIDAETHALDPVYAKKLGVN	IDELLSQPDTEGEQALEI	CDALARSGAVDIV	140
NTDB id 1022 ACIAD RS06390 WP 004925639.1	VEIYGPESSGKTTVALHAVA	IAAQC	QKAGGTC	AFIDAETHALDPQYARKLGVD	IDNLLVSQPDHTEGEQALEI	ADMLVRSGAVDIV	140
NTDB id 1074 ABD1 RS10195 WP 000344167.1	IEIYGPESSGKTTVALHAVA	IAAQC	QKAGGTC	AFIDAETHALDPQYARKLGVD	IDNLLVSQPDHTEGEQALEI	ADMLVRSGAVDIV	140
NTDB id 1205 PSJM300 05545 AFN77183.1	VEIYGPESSGKTTVALHAVA	IAAAQ	RMGSTC	AFVDAETHALDPDYAGKLGVN	VDDLVSQPDTEGEQALEI	TDMLVRSNAVDIV	140
consensus	***!!!*!!!* ! **!	!* **	!***!!!*!!!* !!	!!**!!!*!!!*!!!* !!	!!**!!!*!!!*!!!* !!	!!**!!!*!!!*!!!* !!	!!**!!!*!!!*!!!* !!

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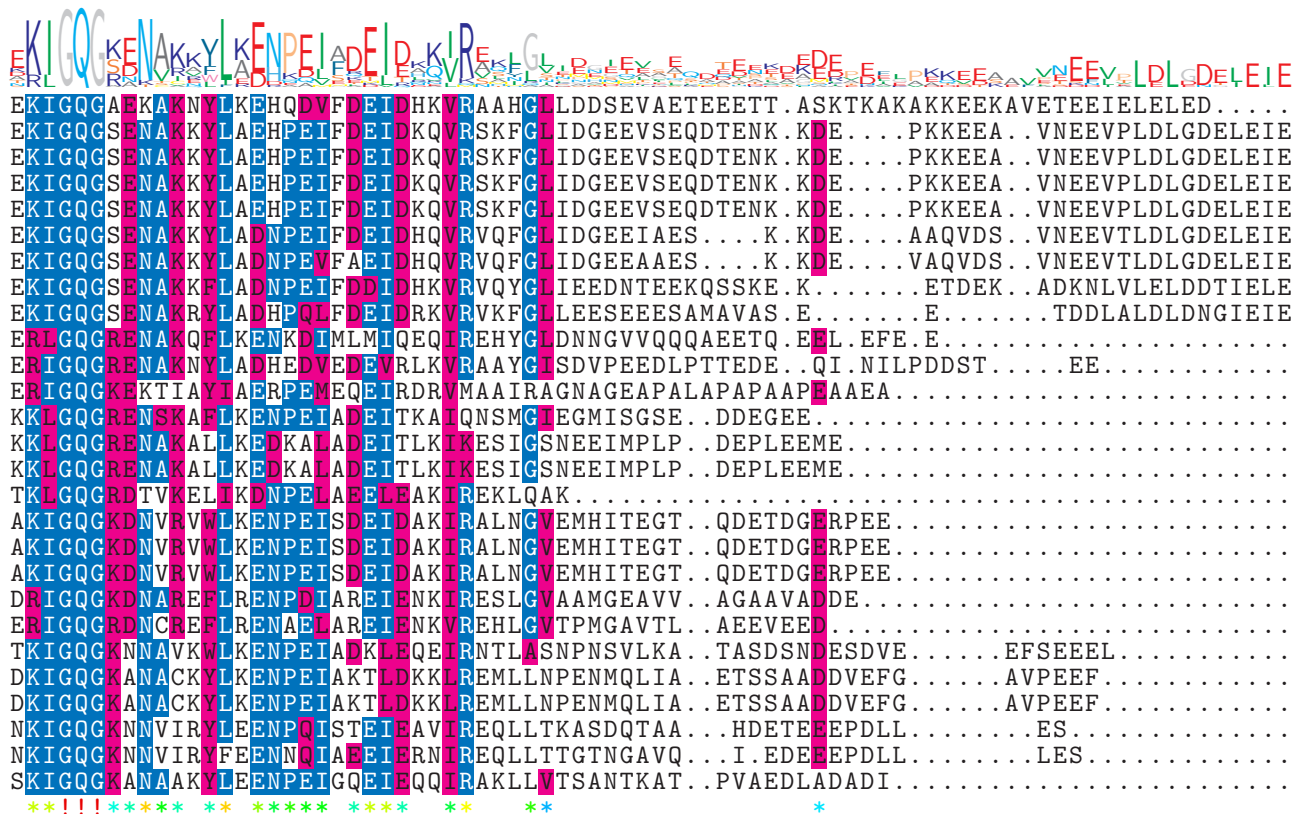


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NTDB id 269	KZH43	RS08665	WP 001085462.1	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	G	A	S	I	N	K	T	K	T	I	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	S	233	
NTDB id 228	SPD	RS09265	WP 001085462.1	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	G	A	S	I	N	K	T	K	T	I	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	S	233	
NTDB id 194	SPR	RS08825	WP 001085462.1	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	G	A	S	I	N	K	T	K	T	I	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	S	233	
NTDB id 159	SP	RS09750	WP 001085462.1	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	G	A	S	I	N	K	T	K	T	I	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	S	233	
NTDB id 499	SM12261	RS08315	WP 078228268.1	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	G	A	S	I	N	K	T	K	T	I	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	S	233	
NTDB id 527	SMSK321	RS11065	WP 001085454.1	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	G	A	S	I	N	K	T	K	T	I	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	S	233	
NTDB id 408	SMU	RS09530	WP 002262392.1	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	S	A	S	I	N	K	T	K	T	I	A	I	F	I	N	Q	L	R	E	K	V	G	I	M	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	S	233		
NTDB id 453	Spy49	1753c	ACI62003.1	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	S	A	S	I	N	K	T	K	T	I	A	I	F	I	N	Q	L	R	E	K	V	G	M	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	S	233		
NTDB id 115	BSU	16940	NP 389576.2	V	V	D	S	V	A	A	L	V	P	K	A	E	I	E	G	M	G	D	S	H	V	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	S	G	A	I	N	K	S	K	T	I	A	I	F	I	N	Q	I	R	E	K	V	G	M	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	S	218			
NTDB id 625	LCA	RS02525	WP 011374196.1	V	V	D	S	V	A	A	L	V	P	R	A	E	I	E	G	E	M	G	D	A	H	V	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	S	G	T	I	N	K	T	K	T	I	A	L	F	I	N	Q	I	R	E	K	V	G	M	F	G	N	P	E	V	T	P	G	G	R	A	L	K	F	Y	S	T	220	
NTDB id 1313	DR	RS12030	WP 010888966.1	V	V	D	S	V	A	A	L	T	P	R	A	E	I	E	G	M	G	D	S	L	P	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	A	I	L	S	K	T	G	T	A	A	I	F	I	N	Q	V	R	E	K	I	G	V	M	F	Y	G	N	P	E	T	T	T	G	G	R	A	L	K	F	Y	A	S	232
NTDB id 1245	Cj1673c	YP 002345041.1	V	V	D	S	V	A	A	L	T	P	K	A	E	I	E	G	M	G	D	Q	H	V	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	G	I	V	H	K	M	N	T	T	V	I	F	I	N	Q	I	R	M	K	I	G	A	M	G	Y	G	T	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	S	220	
NTDB id 1211	C694	RS00795	WP 000963128.1	V	V	D	S	V	A	A	L	T	P	K	A	E	I	D	G	M	G	D	Q	H	V	G	L	Q	A	R	L	M	S	H	A	L	R	K	I	T	G	V	L	H	K	M	N	T	T	L	I	F	I	N	Q	I	R	M	K	I	G	M	M	G	Y	G	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	S	222
NTDB id 1214	NCTC11637	00359	SQJ03206.1	V	V	D	S	V	A	A	L	T	P	K	A	E	I	D	G	M	G	D	Q	H	V	G	L	Q	A	R	L	M	S	H	A	L	R	K	I	T	G	V	L	H	K	M	N	T	T	L	I	F	I	N	Q	I	R	M	K	I	G	M	M	G	Y	G	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	S	222
NTDB id 1334	RAOC	RS04870	WP 004918236.1	V	V	D	S	V	A	A	L	T	P	K	A	E	I	D	G	M	G	D	S	K	M	G	L	H	A	R	L	M	S	Q	A	L	R	K	L	T	S	S	I	S	K	T	K	C	T	V	I	F	I	N	Q	L	R	D	K	I	G	V	M	F	G	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	S	228	
NTDB id 1130	NGFG	RS03960	WP 003688695.1	V	V	D	S	V	A	A	L	V	P	K	A	E	I	E	G	M	G	D	S	H	V	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	G	H	I	K	K	T	N	T	L	V	V	F	I	N	Q	I	R	M	K	I	G	V	M	F	G	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	S	220		
NTDB id 1124	NGFG	RS03960	WP 003688695.1	V	V	D	S	V	A	A	L	V	P	K	A	E	I	E	G	M	G	D	S	H	V	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	G	H	I	K	K	T	N	T	L	V	V	F	I	N	Q	I	R	M	K	I	G	V	M	F	G	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	S	220		
NTDB id 1123	OK783	RS03845	WP 003688695.1	V	V	D	S	V	A	A	L	V	P	K	A	E	I	E	G	M	G	D	S	H	V	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	G	H	I	K	K	T	N	T	L	V	V	F	I	N	Q	I	R	M	K	I	G	V	M	F	G	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	S	220		
NTDB id 58856	BRPE64	RS02235	WP 016344388.1	V	I	D	S	V	A	A	L	V	P	K	A	E	I	E	G	M	G	D	S	L	P	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	G	T	I	K	R	T	N	C	L	V	I	F	I	N	Q	I	R	M	K	I	G	V	M	F	G	N	P	E	T	T	T	G	G	N	A	L	K	F	Y	S	230		
NTDB id 1427	RS	RS02760	WP 011000510.1	V	I	D	S	V	A	A	L	V	P	K	A	E	I	E	G	M	G	D	A	L	P	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	G	T	I	K	R	T	N	C	L	V	I	F	I	N	Q	I	R	M	K	I	G	V	M	F	G	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	S	228	
NTDB id 1389	A4U84	RS07560	WP 021112712.1	I	V	D	S	V	A	A	L	T	P	K	A	E	I	E	G	M	G	D	S	H	M	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	A	N	I	K	N	T	N	C	L	V	V	F	I	N	Q	I	R	M	K	I	G	V	M	F	G	N	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	S	236	
NTDB id 1165	A1552VC	RS01565	WP 000344154.1	V	V	D	S	V	A	A	L	T	P	K	A	E	I																																																																		

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NTDB id 600 KW2 RS01765 WP 011675413.1
 NTDB id 269 KZH43 RS08665 WP 001085462.1
 NTDB id 228 SPD RS09265 WP 001085462.1
 NTDB id 194 SPR RS08825 WP 001085462.1
 NTDB id 159 SP RS09750 WP 001085462.1
 NTDB id 499 SM12261 RS08315 WP 078228268.1
 NTDB id 527 SMSK321 RS11065 WP 001085454.1
 NTDB id 408 SMU RS09530 WP 002262392.1
 NTDB id 453 Spy49 1753c ACI62003.1
 NTDB id 115 BSU 16940 NP 389576.2
 NTDB id 625 LCA RS02525 WP 011374196.1
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 NTDB id 1142 GTF74 RS11550 WP 000344154.1
 NTDB id 1022 ACIAD RS06390 WP 004925639.1
 NTDB id 1074 ABD1 RS10195 WP 000344167.1
 NTDB id 1205 PSJM300 05545 AFN77183.1

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 408 SMU RS09530 WP 002262392.1	D..	383
NTDB id 453 Spy49 1753c ACI62003.1	D..	378
NTDB id 115 BSU 16940 NP 389576.2	...	348
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NTDB id 1211 C694 RS00795 WP 000963128.1	...	347
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NTDB id 1334 RAOC RS04870 WP 004918236.1	...	343
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NTDB id 58856 BRPE64 RS02235 WP 016344388.1	...	356
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NTDB id 1389 A4U84 RS07560 WP 021112712.1	...	372
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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