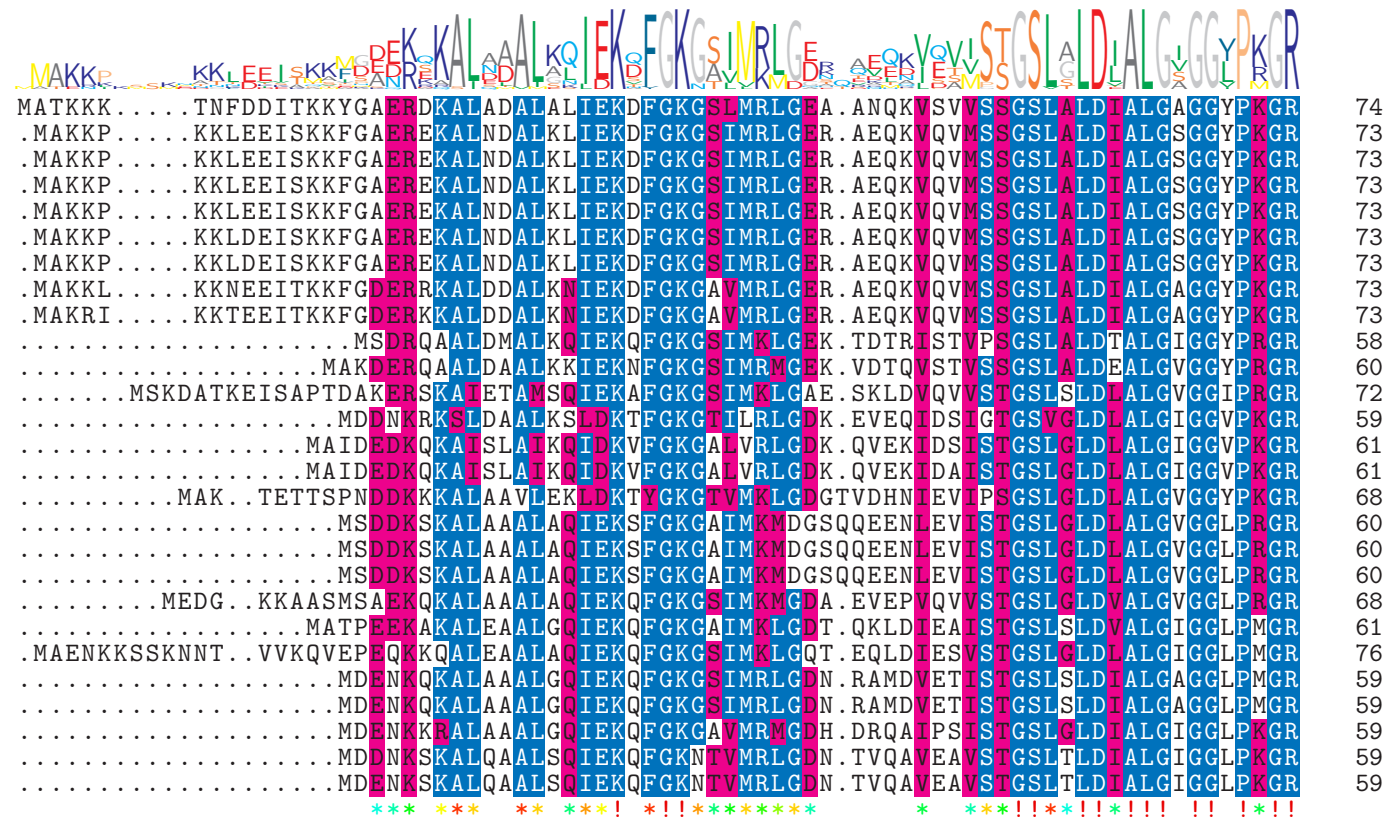


```

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 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 115 BSU 16940 NP 389576.2
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 379839 FWK47 RS06830 WP 075293444.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 1205 PSJM300 05545 AFN77183.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

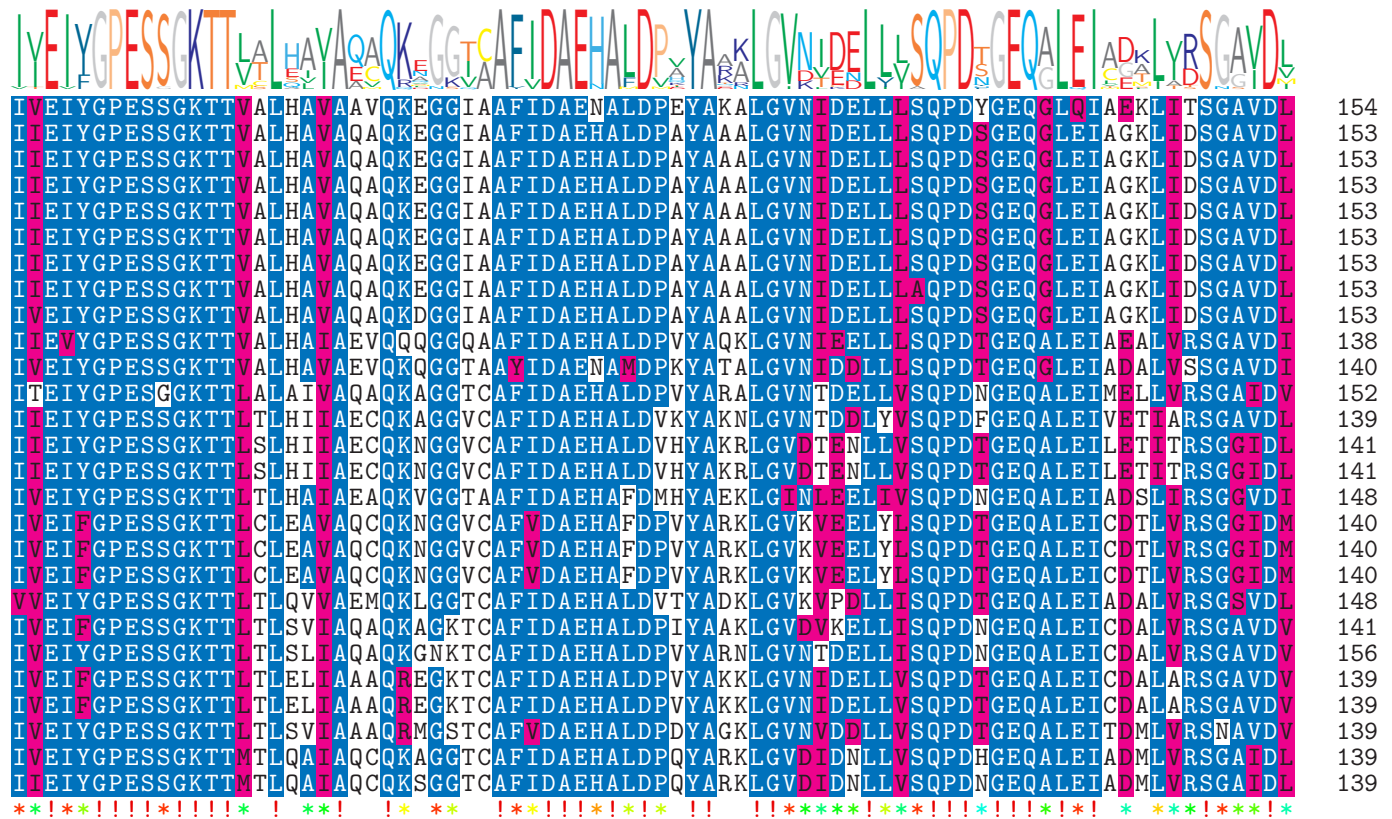
```



```

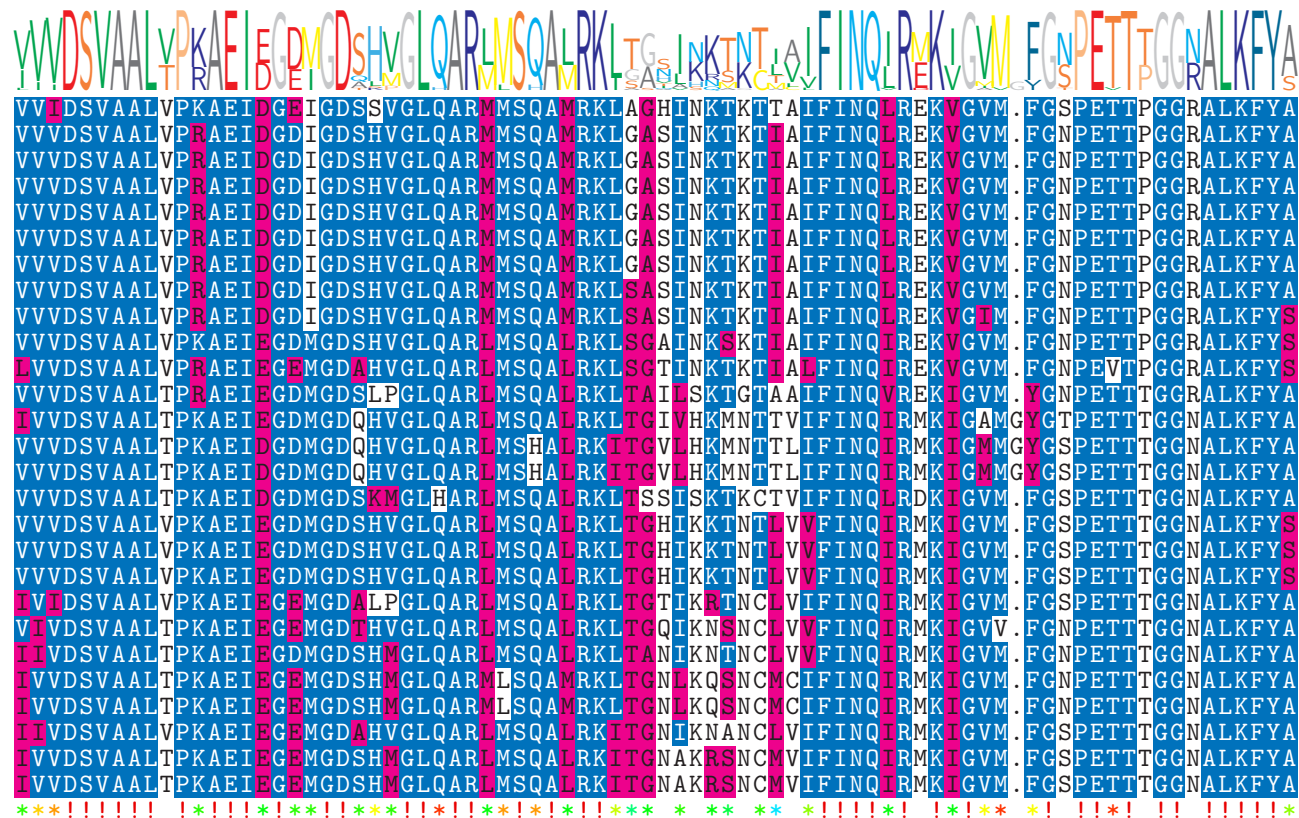
NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 115 BSU 16940 NP 389576.2
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 379839 FWK47 RS06830 WP 075293444.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 1205 PSJM300 05545 AFN77183.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

```



NTDB	id	600	KW2	RS01765	WP	011675413.1	VV	DSVAAL	VP	KA	ED	GH	IG	SS	VGLQAR	MS	QAMR	KL	GA	CH	INKT	KT	TA	IF	IN	QL	RE	KV	GV	GM	FG	SP	ETT	P	GG	RAL	KFYA	233			
NTDB	id	269	KZH43	RS08665	WP	001085462.1	VV	DSVAAL	VP	RA	EI	DD	IG	SH	VGLQAR	MS	QAMR	KL	GA	SI	INKT	KT	TA	IF	IN	QL	RE	KV	GV	GM	FG	NP	ETT	P	GG	RAL	KFYA	232			
NTDB	id	228	SPD	RS09265	WP	001085462.1	VV	DSVAAL	VP	RA	EI	DD	IG	SH	VGLQAR	MS	QAMR	KL	GA	SI	INKT	KT	TA	IF	IN	QL	RE	KV	GV	GM	FG	NP	ETT	P	GG	RAL	KFYA	232			
NTDB	id	194	SPR	RS08825	WP	001085462.1	VV	DSVAAL	VP	RA	EI	DD	IG	SH	VGLQAR	MS	QAMR	KL	GA	SI	INKT	KT	TA	IF	IN	QL	RE	KV	GV	GM	FG	NP	ETT	P	GG	RAL	KFYA	232			
NTDB	id	159	SP	RS09750	WP	001085462.1	VV	DSVAAL	VP	RA	EI	DD	IG	SH	VGLQAR	MS	QAMR	KL	GA	SI	INKT	KT	TA	IF	IN	QL	RE	KV	GV	GM	FG	NP	ETT	P	GG	RAL	KFYA	232			
NTDB	id	527	SMSK321	RS11065	WP	001085454.1	VV	DSVAAL	VP	RA	EI	DD	IG	SH	VGLQAR	MS	QAMR	KL	GA	SI	INKT	KT	TA	IF	IN	QL	RE	KV	GV	GM	FG	NP	ETT	P	GG	RAL	KFYA	232			
NTDB	id	499	SM12261	RS08315	WP	078228268.1	VV	DSVAAL	VP	RA	EI	DD	IG	SH	VGLQAR	MS	QAMR	KL	GA	SI	INKT	KT	TA	IF	IN	QL	RE	KV	GV	GM	FG	NP	ETT	P	GG	RAL	KFYA	232			
NTDB	id	453	Spy49	1753c	ACI62003.1	VV	DSVAAL	VP	RA	EI	DD	IG	SH	VGLQAR	MS	QAMR	KL	SA	SI	INKT	KT	TA	IF	IN	QL	RE	KV	GV	GM	FG	NP	ETT	P	GG	RAL	KFYA	232				
NTDB	id	408	SMU	RS09530	WP	002262392.1	VV	DSVAAL	VP	RA	EI	DD	IG	SH	VGLQAR	MS	QAMR	KL	SA	SI	INKT	KT	TA	IF	IN	QL	RE	KV	GM	FG	NP	ETT	P	GG	RAL	KFY	S	232			
NTDB	id	115	BSU	16940	NP	389576.2	VV	DSVAAL	VP	KA	EI	ED	GM	DS	HVGLQAR	LS	QALR	KL	SG	AI	NS	KT	IA	IF	IN	QI	RE	KV	GV	GM	FG	NP	ETT	P	GG	RAL	KFY	S	217		
NTDB	id	625	LCA	RS02525	WP	0011374196.1	L	V	DSVAAL	VP	RA	EI	ED	GM	GD	AHVGLQAR	LS	QALR	KL	SG	IT	INKT	KT	IA	IF	IN	QI	RE	KV	GM	FG	NP	EV	TP	GG	RAL	KFY	S	219		
NTDB	id	1313	DR	RS12030	WP	010888966.1	VV	DSVAAL	TP	RA	EI	ED	GM	GD	S	LPGLQAR	LS	QALR	KL	TA	IL	SK	TG	TAA	IF	IN	QV	RE	KI	GV	GM	YG	NP	PETT	T	GG	RAL	KFYA	231		
NTDB	id	1245	Cj1673c	YP	002345041.1	L	V	DSVAAL	TP	KA	EI	ED	GM	GD	QH	VGLQAR	LS	QALR	KL	TG	IV	HK	MN	TT	V	IF	IN	QI	RM	KI	GA	MG	YGT	PETT	T	GG	NAL	KFYA	219		
NTDB	id	1211	C694	RS00795	WP	000963128.1	VV	DSVAAL	TP	KA	EI	ED	GM	GD	QH	VGLQAR	LS	MS	HALR	KI	IT	GV	L	HK	MN	TT	L	IF	IN	QI	RM	KI	GM	MG	YGS	PETT	T	GG	NAL	KFYA	222
NTDB	id	1214	NCTC11637	00359	SQJ03206.1	VV	DSVAAL	TP	KA	EI	ED	GM	GD	QH	VGLQAR	LS	MS	HALR	KI	IT	GV	L	HK	MN	TT	L	IF	IN	QI	RM	KI	GM	MG	YGS	PETT	T	GG	NAL	KFYA	221	
NTDB	id	1334																																							

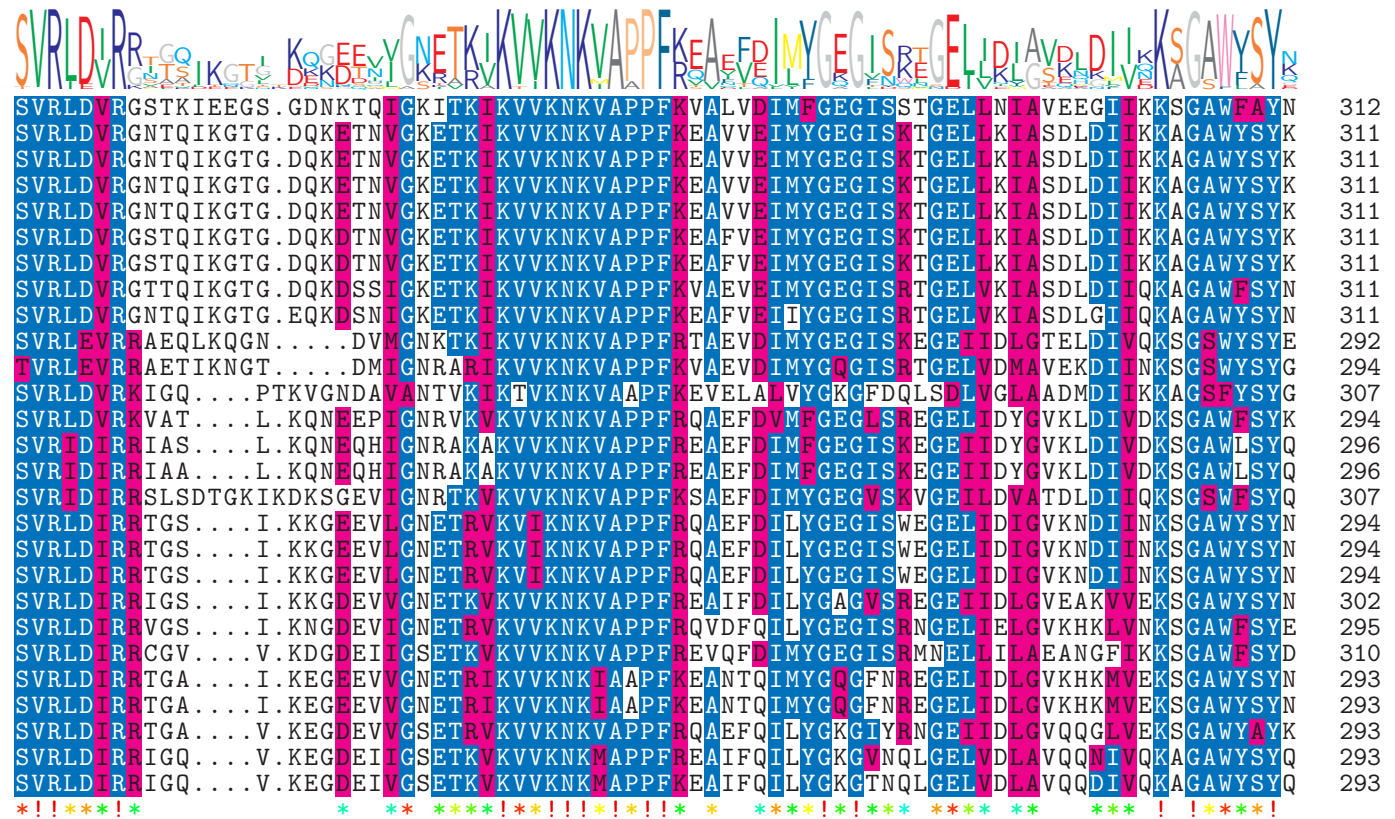
consensus



```

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 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 115 BSU 16940 NP 389576.2
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 379839 FWK47 RS06830 WP 075293444.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 1205 PSJM300 05545 AFN77183.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

```



logo

NTDB id 600 KW2 RS01765 WP 011675413.1	DEKIGQGA	EKAKNYLKEHQDV	DEIDHKVRAAHG	LDDSEVAETEEETT	ASKTKAKAKKE	..EKAVETEEIELELED...	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKKDE	PKKE..EA..VNEEVPLDLGDELE		383
NTDB id 228 SPD RS09265 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKKDE	PKKE..EA..VNEEVPLDLGDELE		383
NTDB id 194 SPR RS08825 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKKDE	PKKE..EA..VNEEVPLDLGDELE		383
NTDB id 159 SP RS09750 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKKDE	PKKE..EA..VNEEVPLDLGDELE		383
NTDB id 527 SMSK321 RS11065 WP 001085454.1	DEKIGQGS	ENAKKYLADNPEVFAE	IDHQVRVQFGL	IDGEEAAE....SKKDE....VAQV..DS..VNEEVTLDLGDELE			379
NTDB id 499 SM12261 RS08315 WP 078228268.1	DEKIGQGS	ENAKKYLADNPEIF	DEIDHQVRVQFGL	IDGEEIAE....SKKDE....AAQV..DS..VNEEVTLDLGDELE			379
NTDB id 453 Spy49 1753c ACI62003.1	GEKIGQGS	ENAKRYLADHPQLF	DEIDRKVRVKFGL	LEESEEEESAMAVASE.....E.....TDDLALDLDN	GIE		375
NTDB id 408 SMU RS09530 WP 002262392.1	GEKIGQGS	ENAKKFLADNPEIF	DDIDHKVRVQYGL	IEEDNTEEKQSSKEK.....ETD..EK..ADKNLVLELDDTIE			380
NTDB id 115 BSU 16940 NP 389576.2	EEERLGGG	RENAKQFLKENKDIM	LMIQEQIREHYGL	DNNGVVQQAEETQEEL.EFE.E.....			348
NTDB id 625 LCA RS02525 WP 011374196.1	SERIGQG	RENAKNYLADHED	VEDEVRLKVR	AAYGISDVPPEEDLPTTEDE.QI.NILPDDS..T.....EE.....			355
NTDB id 1313 DR RS12030 WP 010888966.1	DERIGQG	KEKTIAYIAERPE	MEQEIRDRVMAA	AIRAGNAGEAPALAPAPAAPEAAEA.....			363
NTDB id 1245 Cj1673c YP 002345041.1	DKKLGGG	RENSKAFLENPEI	ADEITKAIQNSM	GIEGMI....SGSEDDEGEE.....			343
NTDB id 1211 C694 RS00795 WP 000963128.1	DKKLGGG	RENAKALLKEDKA	LADAITLKIKES	IGSNEEI....MPLPDEPLEEME.....			347
NTDB id 1214 NCTC11637 00359 SQJ03206.1	DKKLGGG	RENAKALLKEDKA	LADAITLKIKES	IGSNEEI....MPLPDEPLEEME.....			347
NTDB id 1334 RAOC RS04870 WP 004918236.1	DTKLGGQ	RDITVKELIKDN	PELAELEAKIRE	KLQAK.....			343
NTDB id 1130 NGFG RS03960 WP 003688695.1	GAKIGQG	KDNVRVWLKEN	PEISDEIDAKIR	ALNGVEMHI....T.....EGTQDET	DGERPEE.....		348
NTDB id 1124 NGFG RS03960 WP 003688695.1	GAKIGQG	KDNVRVWLKEN	PEISDEIDAKIR	ALNGVEMHI....T.....EGTQDET	DGERPEE.....		348
NTDB id 1123 OK783 RS03845 WP 003688695.1	GAKIGQG	KDNVRVWLKEN	PEISDEIDAKIR	ALNGVEMHI....T.....EGTQDET	DGERPEE.....		348
NTDB id 1427 RS RS02760 WP 011000510.1	GERIGQG	RDNCREFLRENA	EELAREIENKVR	EHLGVTPMG....AVTLAE.EVEED.....			352
NTDB id 379839 FWK47 RS06830 WP 075293444.1	GEKIGQG	KANAMKWLAENP	DQAAVLEQKL	RSELLANPEK....ALLADI.EA	SEQDISGTESDF.....		355
NTDB id 1389 A4U84 RS07560 WP 021112712.1	GTKIGQG	KNNAVKWLKEN	PEIADKLEQEI	RNTLASNPNS....VLKATA.SDSNDES...DVEEF	SEEEL.....		372
NTDB id 1165 A1552VC RS01565 WP 000344154.1	GDKIGQG	KANACKYLVKEN	PEIAKTLDKKL	REMLLNPENM....QLIAETSSA	ADDVEFGAVPEEF.....		354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	GDKIGQG	KANACKYLVKEN	PEIAKTLDKKL	REMLLNPENM....QLIAETSSA	ADDVEFGAVPEEF.....		354
NTDB id 1205 PSJM300 05545 AFN77183.1	GSKIGQG	KANAAYLEEN	PEIGQIEEQ	IRAKLLVTSAN....TKATPVAED	LADADI.....		347
NTDB id 1022 ACIAD RS06390 WP 004925639.1	GNKIGQG	KNNVIRYLEEN	PQISTEIEAV	IREQLLT	TKASD....QTAA.HDETEEEP	DLL..ES.....	349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	GNKIGQG	KNNVIRYFEEN	NQIAEEIERN	IREQLLT	TGTN....GAVQ.I.EDEEEP	DLL..LES.....	349
consensus	***!!!	*****	**	*****	*****	**	**

logo

		IEIEE	
NTDB id 600 KW2 RS01765 WP 011675413.1	.....		387
NTDB id 269 KZH43 RS08665 WP 001085462.1	IEIEE		388
NTDB id 228 SPD RS09265 WP 001085462.1	IEIEE		388
NTDB id 194 SPR RS08825 WP 001085462.1	IEIEE		388
NTDB id 159 SP RS09750 WP 001085462.1	IEIEE		388
NTDB id 527 SMSK321 RS11065 WP 001085454.1	IEIEE		384
NTDB id 499 SM12261 RS08315 WP 078228268.1	IEIEE		384
NTDB id 453 Spy49 1753c ACI62003.1	IED..		378
NTDB id 408 SMU RS09530 WP 002262392.1	LED..		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 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 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 379839 FWK47 RS06830 WP 075293444.1	.....		355
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.....		372
NTDB id 1165 A1552VC RS01565 WP 000344154.1	.....		354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	.....		354
NTDB id 1205 PSJM300 05545 AFN77183.1	.....		347
NTDB id 1022 ACIAD RS06390 WP 004925639.1	.....		349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	.....		349
consensus			

- ⓧ non conserved
- ⓧ similar
- ⓧ ≥ 50% conserved