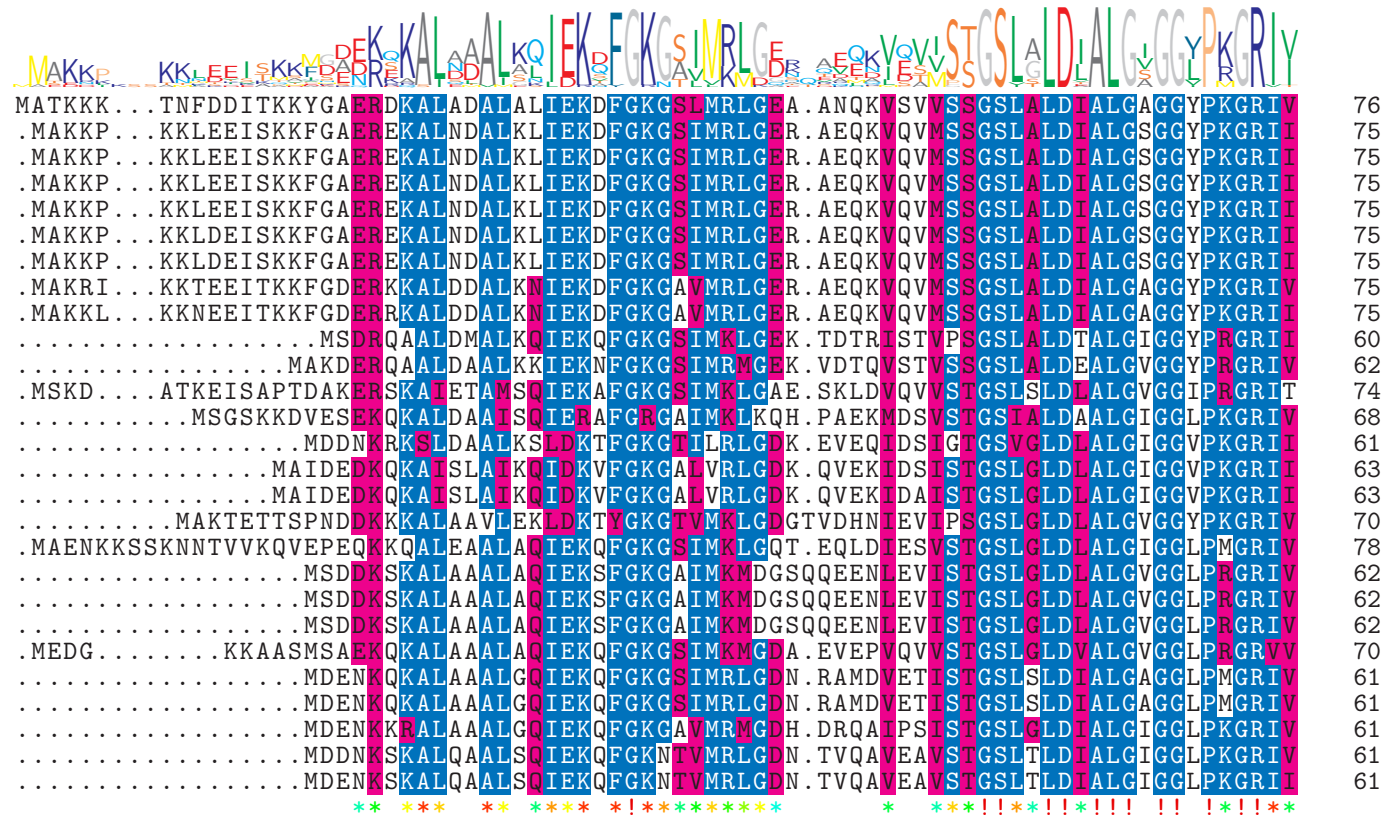


```

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
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 32953 AMF RS05375 WP 010262591.1
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 1389 A4U84 RS07560 WP 021112712.1
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 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

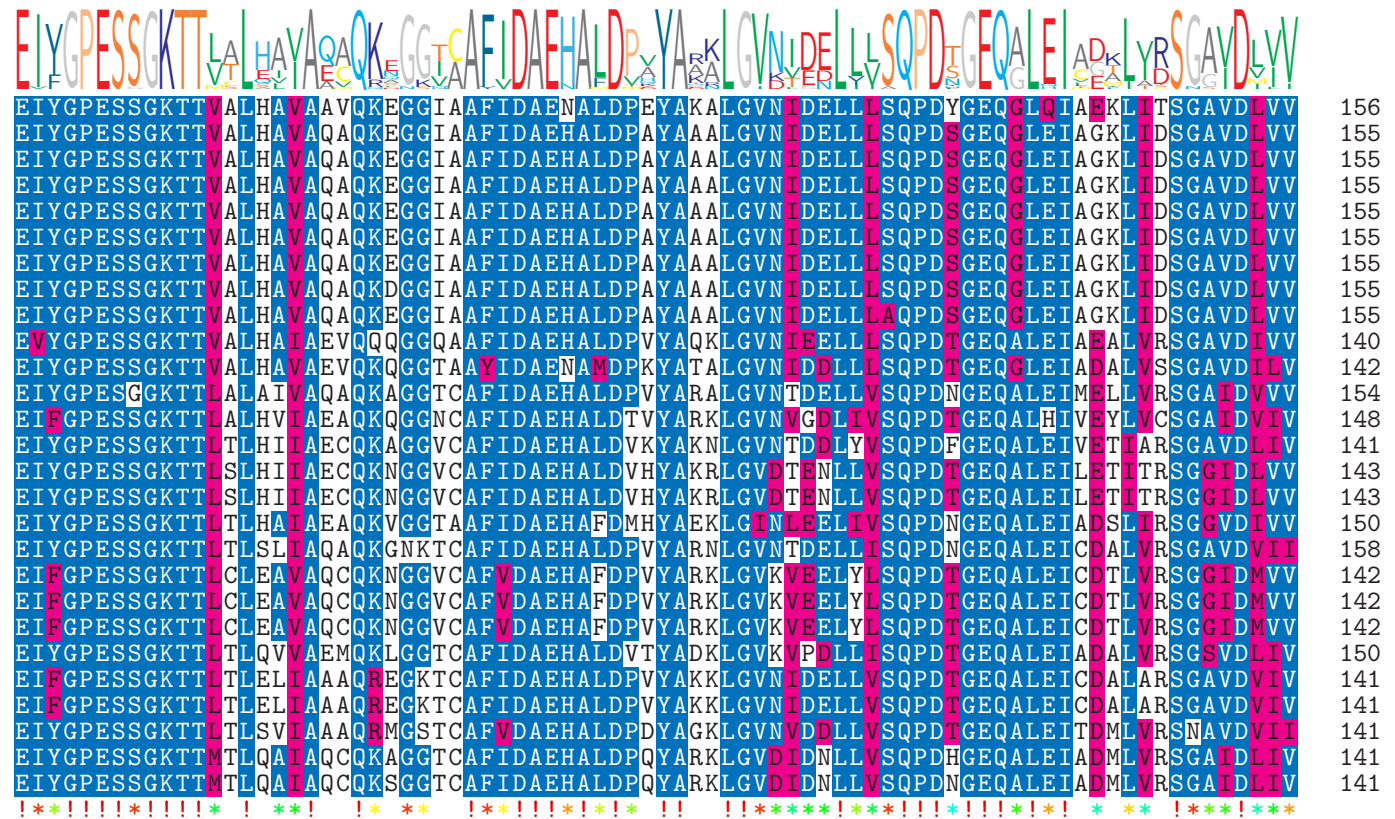
```



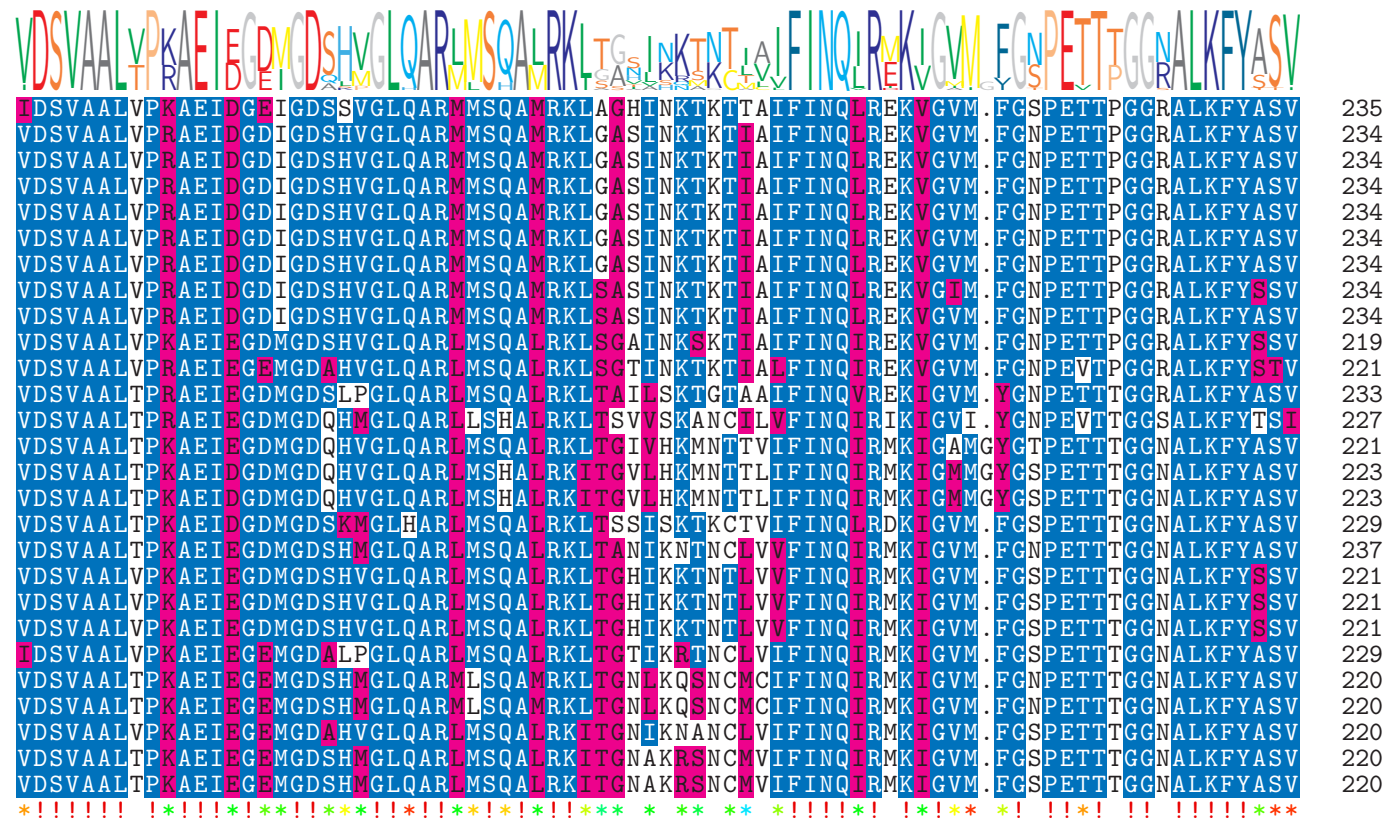
```

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 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
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 32953 AMF RS05375 WP 010262591.1
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 1389 A4U84 RS07560 WP 021112712.1
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 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 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
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 32953 AMF RS05375 WP 010262591.1
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 RA0C RS04870 WP 004918236.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
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 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



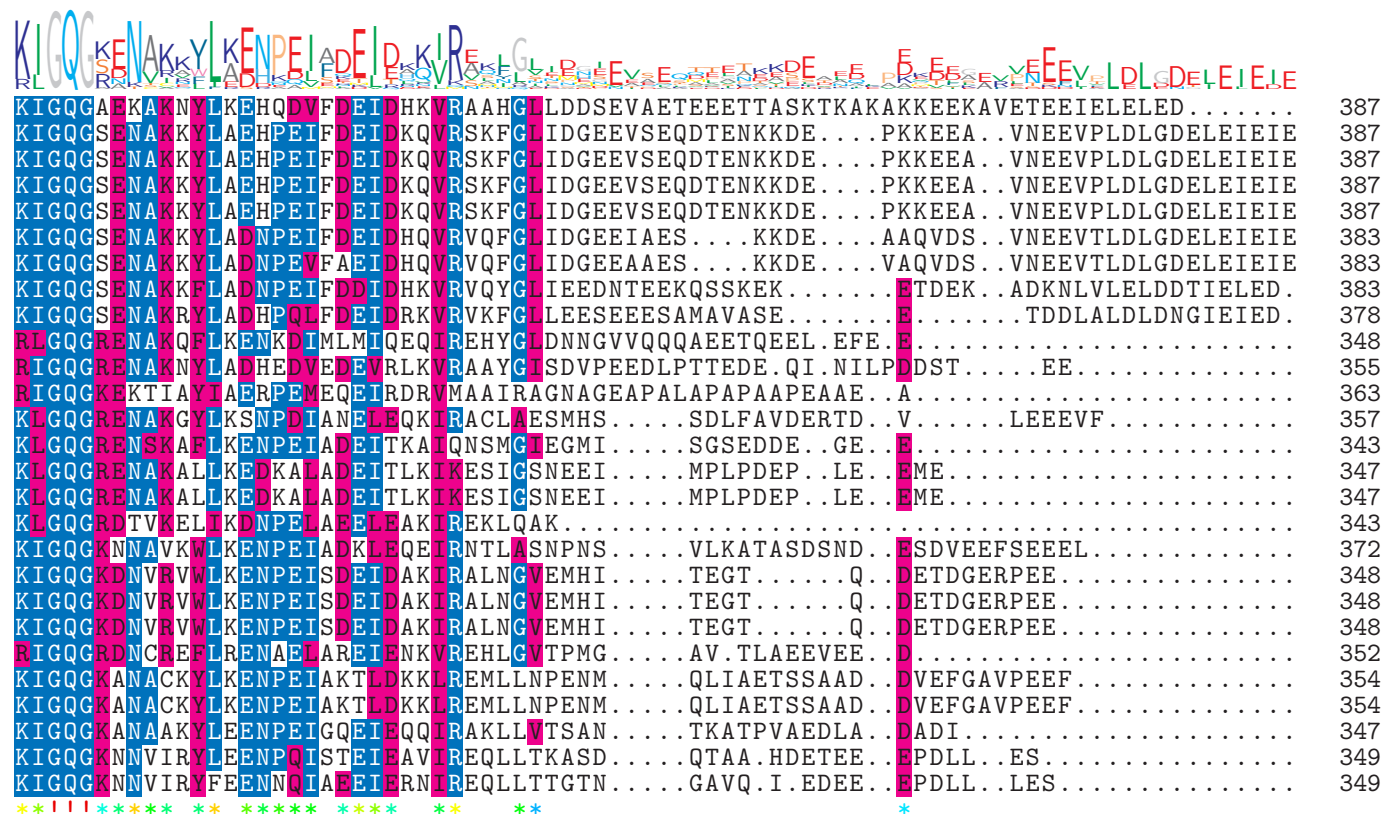
logo

NTDB id 600 KW2 RS01765 WP 011675413.1	RLDVRG	STKIEEGS	.GDNKTQ	IGKITK	IKVVKN	KVAPPF	KVALVD	DIMF	GEGIS	STGELI	NTAVEE	GI	IKKS	GAWFAY	NDE	314					
NTDB id 269 KZH43 RS08665 WP 001085462.1	RLDVRG	NTQIKGTG	.DQKETN	VGKETK	IKVVKN	KVAPPF	KEAVVE	EIMY	GEGIS	KTGELL	KIASDL	DI	IKKAG	AWYSY	KDE	313					
NTDB id 228 SPD RS09265 WP 001085462.1	RLDVRG	NTQIKGTG	.DQKETN	VGKETK	IKVVKN	KVAPPF	KEAVVE	EIMY	GEGIS	KTGELL	KIASDL	DI	IKKAG	AWYSY	KDE	313					
NTDB id 194 SPR RS08825 WP 001085462.1	RLDVRG	NTQIKGTG	.DQKETN	VGKETK	IKVVKN	KVAPPF	KEAVVE	EIMY	GEGIS	KTGELL	KIASDL	DI	IKKAG	AWYSY	KDE	313					
NTDB id 159 SP RS09750 WP 001085462.1	RLDVRG	NTQIKGTG	.DQKETN	VGKETK	IKVVKN	KVAPPF	KEAVVE	EIMY	GEGIS	KTGELL	KIASDL	DI	IKKAG	AWYSY	KDE	313					
NTDB id 499 SM12261 RS08315 WP 078228268.1	RLDVRG	STQIKGTG	.DQKDTN	VGKETK	IKVVKN	KVAPPF	KEAFVE	EIMY	GEGIS	KTGELL	KIASDL	DI	IKKAG	AWYSY	KDE	313					
NTDB id 527 SMSK321 RS11065 WP 001085454.1	RLDVRG	STQIKGTG	.DQKDTN	VGKETK	IKVVKN	KVAPPF	KEAFVE	EIMY	GEGIS	KTGELL	KIASDL	DI	IKKAG	AWYSY	KDE	313					
NTDB id 408 SMU RS09530 WP 002262392.1	RLDVRG	NTQIKGTG	.EQKDSN	IGKETK	IKVVKN	KVAPPF	KEAFVE	EIT	YGEGIS	RTGELV	KIASDL	GI	IKKAG	AWYSY	NGE	313					
NTDB id 453 Spy49 1753c ACI62003.1	RLDVRG	TTQIKGTG	.DQKDSN	IGKETK	IKVVKN	KVAPPF	KVAEVE	EIMY	GEGIS	RTGELV	KIASDL	DI	IKKAG	AWFSY	NGE	313					
NTDB id 115 BSU 16940 NP 389576.2	RLEVRR	AEQLKQGN		DVMGNK	TKIK	VVKNKV	APPFRT	AEVD	DIMY	GEGIS	KEGEIT	IDLGTE	L	DIVQK	SGSWSY	EEE	294				
NTDB id 625 LCA RS02525 WP 011374196.1	RLEVRR	AETIKNGT		DMIGNR	ARIK	VVKNKV	APPFKV	AEVD	DIMY	G	GISRTGEL	VDMAVE	KDI	INKSG	SWSY	GSE	296				
NTDB id 1313 DR RS12030 WP 010888966.1	RLDVRK	IGQ....	PTKVG	ND	AVANT	VKIK	TKTV	KNKVA	APFKE	VELA	L	VYGK	GFD	QLSD	LVGLA	ADMD	ITKKAGS	FYSY	GDE	309	
NTDB id 32953 AMF RS05375 WP 010262591.1	RLDIRK	VSA....	I.KDK	DNVIG	NQTR	VKV	VKNKV	APPFQ	AEFD	DIVY	NEG	ISK	LGE	IVDM	GVK	FGF	VEKSG	AHYSY	GAV	302	
NTDB id 1245 Cj1673c YP 002345041.1	RLDVRK	VAT....	L.KQNE	EEP	IGNRV	VKV	VKNKV	APPFR	QAEFD	VMF	GEG	LSREGEL	IDYGV	KLD	IVDKS	GAWFSY	KDK		296		
NTDB id 1211 C694 RS00795 WP 000963128.1	RIDIRRI	AS....	L.KQNE	EQH	IGNRA	KA	VVKNKV	APPFRE	AEAFD	DIMF	GEGIS	KEGEIT	IDYGV	KLD	IVDKS	GAWLSY	QDK		298		
NTDB id 1214 NCTC11637 00359 SQJ03206.1	RIDIRRI	AA....	L.KQNE	EQH	IGNRA	KA	VVKNKV	APPFRE	AEAFD	DIMF	GEGIS	KEGEIT	IDYGV	KLD	IVDKS	GAWLSY	QDK		298		
NTDB id 1334 RAOC RS04870 WP 004918236.1	RIDIRRS	LSLSD	TGKIK	DKSGEV	IGNR	TKV	VVKNKV	APPFKS	AEAFD	DIMY	GEGV	SKVGE	ILD	VAT	DL	DI	IKKSGS	WFSY	QDT	309	
NTDB id 1389 A4U84 RS07560 WP 021112712.1	RLDIRR	RCGV....	V.KDG	DEI	IGSE	TKV	VVKNKV	APPFRE	REVQ	FDIMY	GEGIS	RMNELL	ILAE	ANG	F	IKKSG	AWFSY	DGT	312		
NTDB id 1130 NGFG RS03960 WP 003688695.1	RLDIRR	TGS....	I.KKG	EEVL	GNET	RVKV	IKNKV	APPFR	QAEFD	DILY	GEGIS	WE	GELID	IGV	KND	II	INKSG	AWYSY	NGA	296	
NTDB id 1124 NGFG RS03960 WP 003688695.1	RLDIRR	TGS....	I.KKG	EEVL	GNET	RVKV	IKNKV	APPFR	QAEFD	DILY	GEGIS	WE	GELID	IGV	KND	II	INKSG	AWYSY	NGA	296	
NTDB id 1123 OK783 RS03845 WP 003688695.1	RLDIRR	TGS....	I.KKG	EEVL	GNET	RVKV	IKNKV	APPFR	QAEFD	DILY	GEGIS	WE	GELID	IGV	KND	II	INKSG	AWYSY	NGA	296	
NTDB id 1427 RS RS02760 WP 011000510.1	RLDIRR	IGS....	I.KKG	DEV	VGN	ETKV	VVKNKV	APPFRE	AI	FDILY	GAGV	S	REGE	ITID	L	GV	EAKV	VEKSG	AWYSY	NGE	304
NTDB id 1165 A1552VC RS01565 WP 000344154.1	RLDIRR	TGA....	I.KEG	EEVL	VGN	ETRI	KVVKNK	IAAPF	KEANT	QIMY	GQGF	N	REGEL	ID	L	GV	VKHK	MVEKSG	AWYSY	NGD	295
NTDB id 1142 GTF74 RS11550 WP 000344154.1	RLDIRR	TGA....	I.KEG	EEVL	VGN	ETRI	KVVKNK	IAAPF	KEANT	QIMY	GQGF	N	REGEL	ID	L	GV	VKHK	MVEKSG	AWYSY	NGD	295
NTDB id 1205 PSJM300 05545 AFN77183.1	RLDIRR	TGA....	V.KEG	DEV	VGS	ETRV	VVKNKV	APPFR	QAEFQ	ILY	GKGI	YRN	GE	ITID	L	GV	QGL	VEKSG	AWYAY	KGS	295
NTDB id 1022 ACIAD RS06390 WP 004925639.1	RLDIRR	IGQ....	V.KEG	DEI	IGSE	TKV	VVKNK	MAPPF	REAI	FQILY	GKGV	N	QLG	ELVD	LAV	QQN	IVQK	AGAWYSY	QGN		295
NTDB id 1074 ABD1 RS10195 WP 000344167.1	RLDIRR	IGQ....	V.KEG	DEI	VGS	ETKV	VVKNK	MAPPF	KEAI	FQILY	GKGT	N	QLG	ELVD	LAV	QQD	IVQK	AGAWYSY	QGN		295
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 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
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 32953 AMF RS05375 WP 010262591.1
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 1389 A4U84 RS07560 WP 021112712.1
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 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	.	387
NTDB	id	269	KZH43	RS08665	WP	001085462.1	E	388
NTDB	id	228	SPD	RS09265	WP	001085462.1	E	388
NTDB	id	194	SPR	RS08825	WP	001085462.1	E	388
NTDB	id	159	SP	RS09750	WP	001085462.1	E	388
NTDB	id	499	SM12261	RS08315	WP	078228268.1	E	384
NTDB	id	527	SMSK321	RS11065	WP	001085454.1	E	384
NTDB	id	408	SMU	RS09530	WP	002262392.1	.	383
NTDB	id	453	Spy49	1753c	ACI62003.1	.	.	378
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	32953	AMF	RS05375	WP	010262591.1	.	357
NTDB	id	1245	Cj1673c	YP	002345041.1	.	.	343
NTDB	id	1211	C694	RS00795	WP	000963128.1	.	347
NTDB	id	1214	NTCT11637	00359	SQJ03206.1	.	.	347
NTDB	id	1334	RA0C	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	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								

- X non conserved
- X similar
- X $\geq 50\%$ conserved