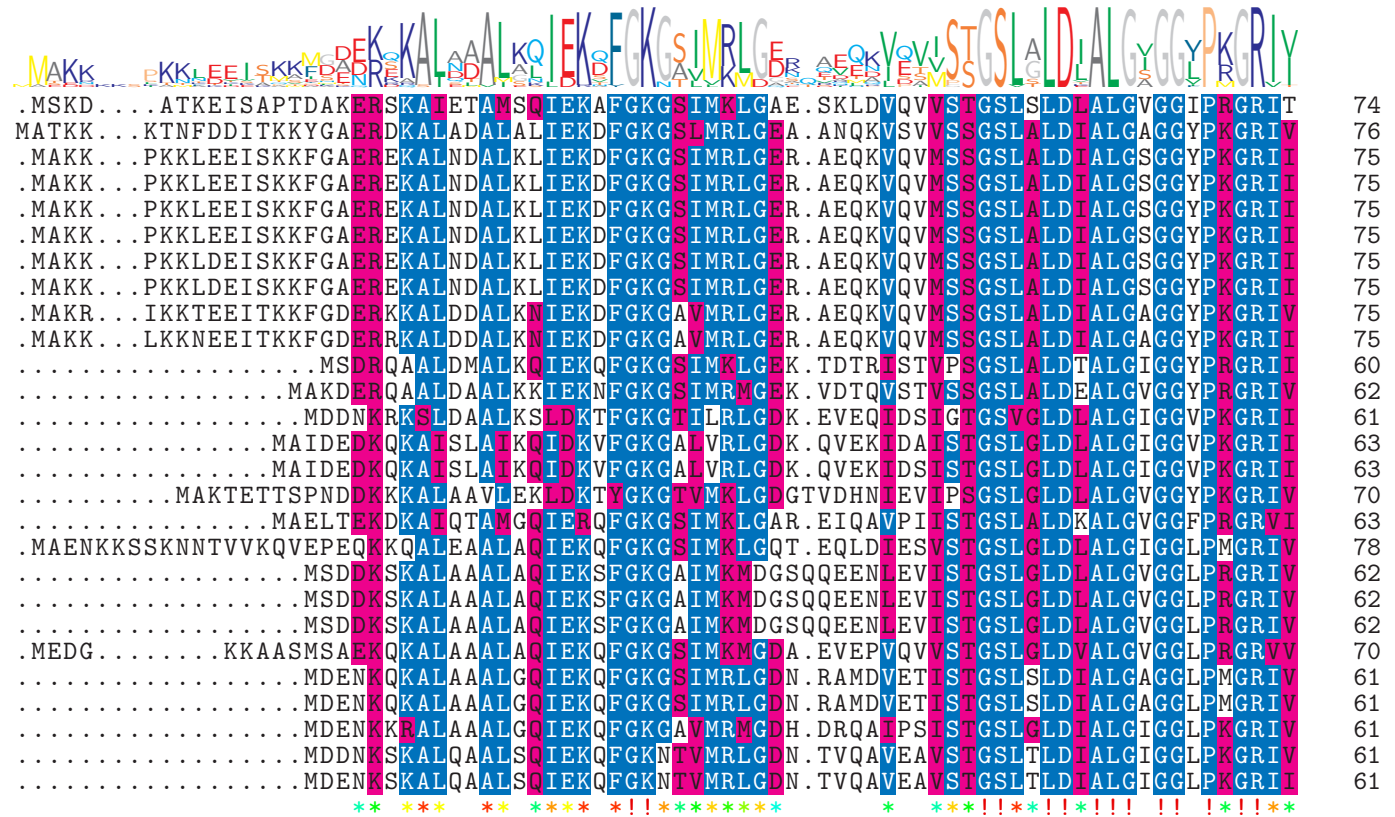


```

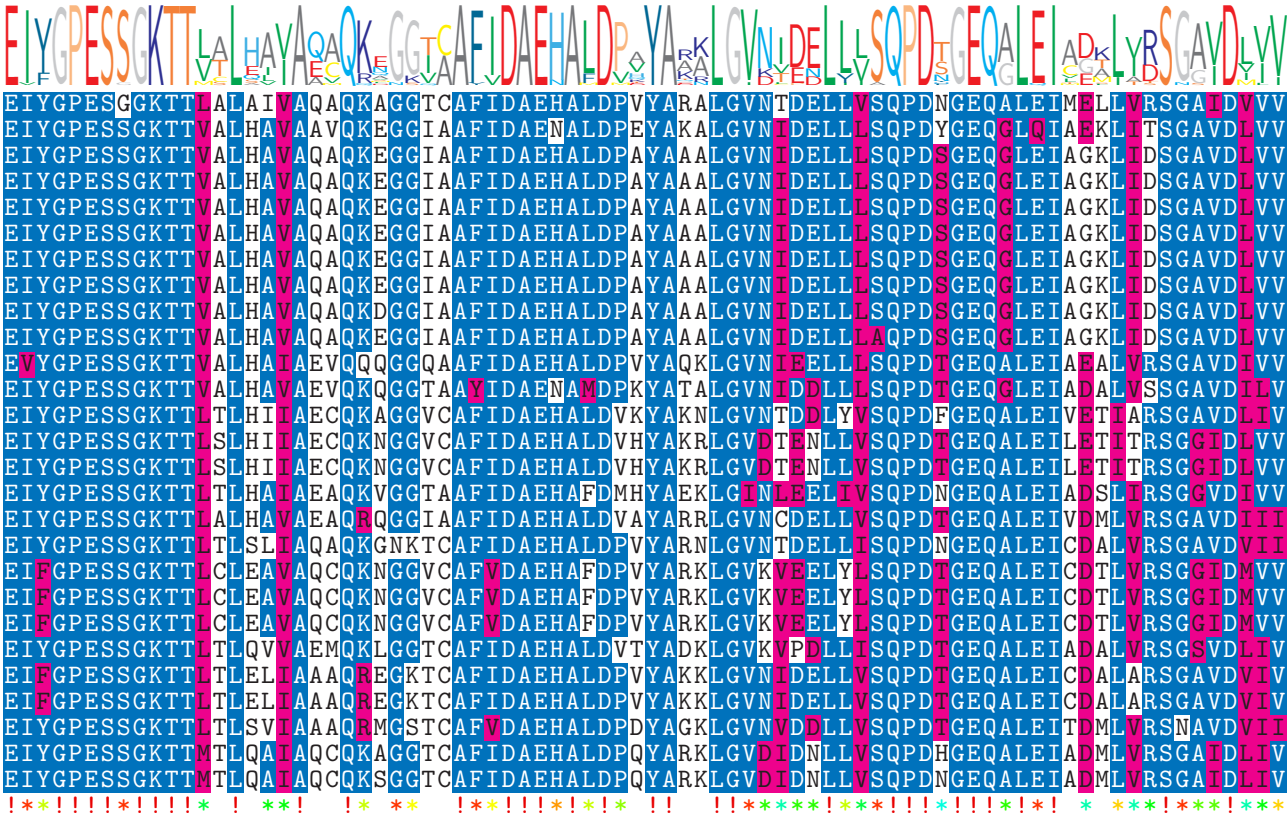
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 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 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 32998 HRM2 RS13540 WP 015904589.1
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

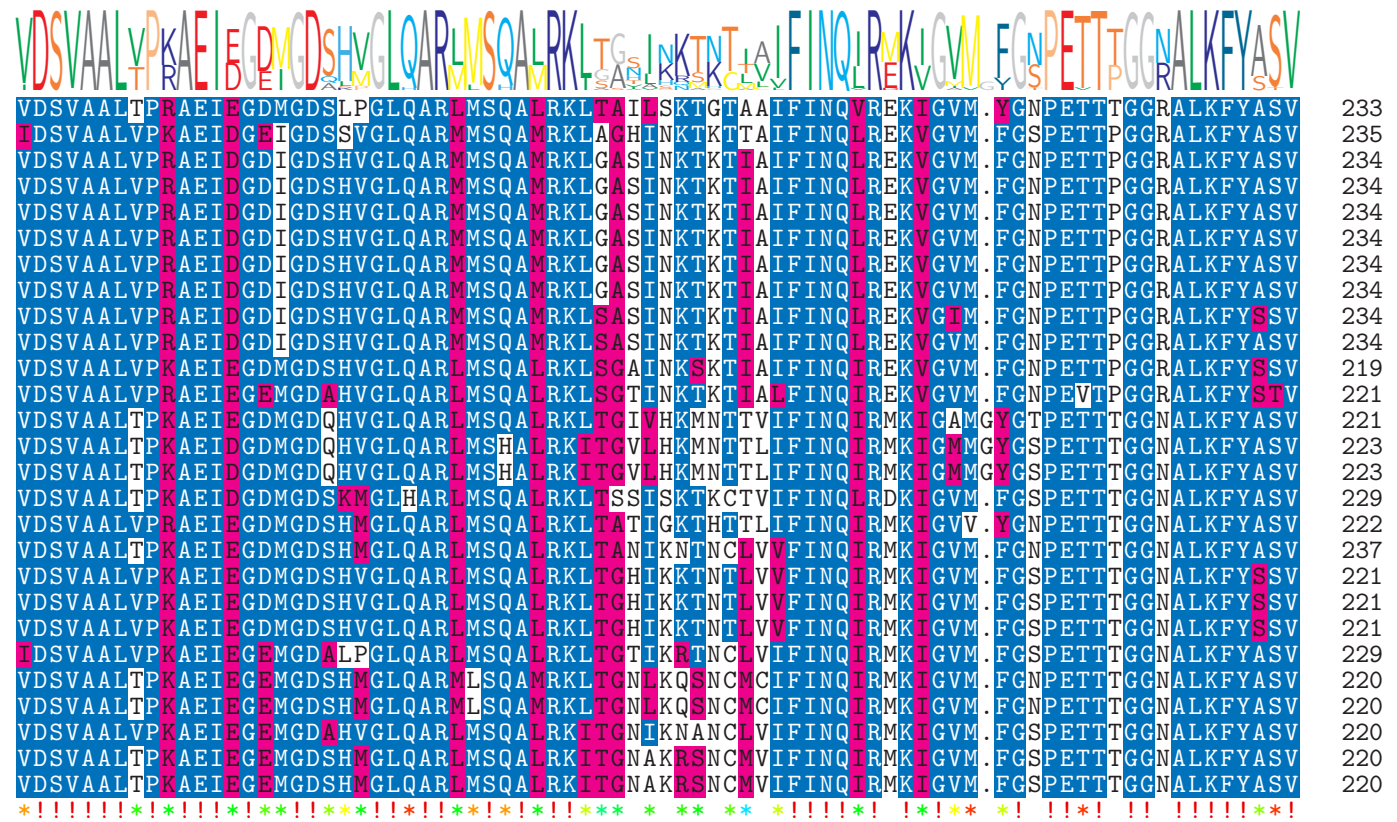
NTDB id 1313 DR RS12030 WP 010888966.1	EIYGPESSGKTTT	154
NTDB id 600 KW2 RS01765 WP 011675413.1	EIYGPESSGKTTT	156
NTDB id 269 KZH43 RS08665 WP 001085462.1	EIYGPESSGKTTT	155
NTDB id 228 SPD RS09265 WP 001085462.1	EIYGPESSGKTTT	155
NTDB id 194 SPR RS08825 WP 001085462.1	EIYGPESSGKTTT	155
NTDB id 159 SP RS09750 WP 001085462.1	EIYGPESSGKTTT	155
NTDB id 499 SM12261 RS08315 WP 078228268.1	EIYGPESSGKTTT	155
NTDB id 527 SMSK321 RS11065 WP 001085454.1	EIYGPESSGKTTT	155
NTDB id 408 SMU RS09530 WP 002262392.1	EIYGPESSGKTTT	155
NTDB id 453 Spy49 1753c ACI62003.1	EIYGPESSGKTTT	155
NTDB id 115 BSU 16940 NP 389576.2	EIYGPESSGKTTT	140
NTDB id 625 LCA RS02525 WP 011374196.1	EIYGPESSGKTTT	142
NTDB id 1245 Cj1673c YP 002345041.1	EIYGPESSGKTTT	141
NTDB id 1214 NCTC11637 00359 SQJ03206.1	EIYGPESSGKTTT	143
NTDB id 1211 C694 RS00795 WP 000963128.1	EIYGPESSGKTTT	143
NTDB id 1334 RAOC RS04870 WP 004918236.1	EIYGPESSGKTTT	150
NTDB id 32998 HRM2 RS13540 WP 015904589.1	EIYGPESSGKTTT	143
NTDB id 1389 A4U84 RS07560 WP 021112712.1	EIYGPESSGKTTT	158
NTDB id 1130 NGFG RS03960 WP 003688695.1	EIYGPESSGKTTT	142
NTDB id 1124 NGFG RS03960 WP 003688695.1	EIYGPESSGKTTT	142
NTDB id 1123 OK783 RS03845 WP 003688695.1	EIYGPESSGKTTT	142
NTDB id 1427 RS RS02760 WP 011000510.1	EIYGPESSGKTTT	150
NTDB id 1165 A1552VC RS01565 WP 000344154.1	EIYGPESSGKTTT	141
NTDB id 1142 GTF74 RS11550 WP 000344154.1	EIYGPESSGKTTT	141
NTDB id 1205 PSJM300 05545 AFN77183.1	EIYGPESSGKTTT	141
NTDB id 1022 ACIAD RS06390 WP 004925639.1	EIYGPESSGKTTT	141
NTDB id 1074 ABD1 RS10195 WP 000344167.1	EIYGPESSGKTTT	141
consensus		



```

NTDB id 1313 DR RS12030 WP 010888966.1
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 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 32998 HRM2 RS13540 WP 015904589.1
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 1313 DR RS12030 WP 010888966.1	RLDVRKIGQ...PTKVGND	AVANTV	KIKTVKNKV	APPFKE	VELALV	YVGKG	FDQLSD	DLVGL	AADM	DI	IKKAG	SFYSY	GDE	309		
NTDB id 600 KW2 RS01765 WP 011675413.1	RLDVRGSTKIEEGS.GDNKTQ	IGKITK	IKVVKNKV	APPFKE	VALVD	IMF	GEGIS	ST	GELLN	IAVEEG	IT	KKSGA	WFAY	NDE	314	
NTDB id 269 KZH43 RS08665 WP 001085462.1	RLDVRGNTQIKGTG.DQKETN	VGKETK	IKVVKNKV	APPFKE	AVVE	IMY	GEGIS	KT	GELLK	IASDL	DI	IKKAG	AWYSY	KDE	313	
NTDB id 228 SPD RS09265 WP 001085462.1	RLDVRGNTQIKGTG.DQKETN	VGKETK	IKVVKNKV	APPFKE	AVVE	IMY	GEGIS	KT	GELLK	IASDL	DI	IKKAG	AWYSY	KDE	313	
NTDB id 194 SPR RS08825 WP 001085462.1	RLDVRGNTQIKGTG.DQKETN	VGKETK	IKVVKNKV	APPFKE	AVVE	IMY	GEGIS	KT	GELLK	IASDL	DI	IKKAG	AWYSY	KDE	313	
NTDB id 159 SP RS09750 WP 001085462.1	RLDVRGNTQIKGTG.DQKETN	VGKETK	IKVVKNKV	APPFKE	AVVE	IMY	GEGIS	KT	GELLK	IASDL	DI	IKKAG	AWYSY	KDE	313	
NTDB id 499 SM12261 RS08315 WP 078228268.1	RLDVRGSTQIKGTG.DQKDTN	VGKETK	IKVVKNKV	APPFKE	AFVE	IMY	GEGIS	KT	GELLK	IASDL	DI	IKKAG	AWYSY	KDE	313	
NTDB id 527 SMSK321 RS11065 WP 001085454.1	RLDVRGSTQIKGTG.DQKDTN	VGKETK	IKVVKNKV	APPFKE	AFVE	IMY	GEGIS	KT	GELLK	IASDL	DI	IKKAG	AWYSY	KDE	313	
NTDB id 408 SMU RS09530 WP 002262392.1	RLDVRGNTQIKGTG.EQKDSN	IGKETK	IKVVKNKV	APPFKE	AFVE	IIY	GEGIS	RT	GELVK	IASDL	GI	IKKAG	AWYSY	NGE	313	
NTDB id 453 Spy49 1753c ACI62003.1	RLDVRGTTQIKGTG.DQKDSN	IGKETK	IKVVKNKV	APPFKE	AEVE	IMY	GEGIS	RT	GELVK	IASDL	DI	IKKAG	AWFSY	NGE	313	
NTDB id 115 BSU 16940 NP 389576.2	RLEVRRAEQLKQGN.....	DVMGNKTK	IKVVKNKV	APPFRT	AEVD	IMY	GEGIS	KEGE	IIDL	GT	ELDIV	QKSGS	WYSY	EEEE	294	
NTDB id 625 LCA RS02525 WP 011374196.1	RLEVRRAETIKNGT.....	DMIGNRAR	IKVVKNKV	APPFKE	AEVD	IMY	GQGIS	RT	GELVD	MAVEK	DI	INKSG	S	WYSY	GSE	296
NTDB id 1245 Cj1673c YP 002345041.1	RLDVRKVAT....L.KQNEEP	IGNRVK	VVVKNKV	APPFRA	AEFD	VMF	GEGLS	R	EGELIDY	GVKLD	IV	DKSGA	WFSY	KDK	296	
NTDB id 1214 NCTC11637 00359 SQJ03206.1	RIDIRRIAA....L.KQNEQH	IGNRAK	AKVVKNKV	APPFRE	AEFD	IMF	GEGIS	KEGE	IIDY	GVKLD	IV	DKSGA	WLSY	QDK	298	
NTDB id 1211 C694 RS00795 WP 000963128.1	RIDIRRIAS....L.KQNEQH	IGNRAK	AKVVKNKV	APPFRE	AEFD	IMF	GEGIS	KEGE	IIDY	GVKLD	IV	DKSGA	WLSY	QDK	298	
NTDB id 1334 RAOC RS04870 WP 004918236.1	RIDIRRSLSDTGKIKDKSGEV	IGNRTK	VVVKNKV	APPFKS	AEFD	IMY	GEGV	SKVGE	ILDV	ATD	LDI	IT	KKSGS	WFSY	QDT	309
NTDB id 32998 HRM2 RS13540 WP 015904589.1	RIEIRKATA....I.KDGENI	LGNRTK	VVVKNK	LAPPFKS	IEFD	LMY	GEGIS	KT	GELLDM	MGVDM	GIV	DKSGA	WYSY	DGE	297	
NTDB id 1389 A4U84 RS07560 WP 021112712.1	RLDIRRCGV....V.KDGEI	IGSETK	VVVKNKV	APPFREV	QFD	IMY	GEGIS	RMNELL	ILAE	ANGF	IT	KKSGA	WFSY	DGT	312	
NTDB id 1130 NGFG RS03960 WP 003688695.1	RLDIRRTGS....I.KKGEVL	GNETRVK	VIKN	KNVAPPFRA	AEFD	DILY	GEGIS	WEGELID	IGVKN	DI	INKSGA	WYSY	NGA	296		
NTDB id 1124 NGFG RS03960 WP 003688695.1	RLDIRRTGS....I.KKGEVL	GNETRVK	VIKN	KNVAPPFRA	AEFD	DILY	GEGIS	WEGELID	IGVKN	DI	INKSGA	WYSY	NGA	296		
NTDB id 1123 OK783 RS03845 WP 003688695.1	RLDIRRTGS....I.KKGEVL	GNETRVK	VIKN	KNVAPPFRA	AEFD	DILY	GEGIS	WEGELID	IGVKN	DI	INKSGA	WYSY	NGA	296		
NTDB id 1427 RS RS02760 WP 011000510.1	RLDIRRIGS....I.KKGEV	GNETK	VVVKNKV	APPFRE	AI	FD	ILY	GAGV	SREGE	IIDL	GV	EAKV	VEKSGA	WYSY	NGE	304
NTDB id 1165 A1552VC RS01565 WP 000344154.1	RLDIRRTGA....I.KEGEV	GNETRI	KVVKNK	IAAPFKE	ANTQIMY	GQGF	N	REGELID	LG	VKHKM	MVEKSGA	WYSY	NGD	295		
NTDB id 1142 GTF74 RS11550 WP 000344154.1	RLDIRRTGA....I.KEGEV	GNETRI	KVVKNK	IAAPFKE	ANTQIMY	GQGF	N	REGELID	LG	VKHKM	MVEKSGA	WYSY	NGD	295		
NTDB id 1205 PSJM300 05545 AFN77183.1	RLDIRRTGA....V.KEGDEV	VGSETR	VVVKNKV	APPFRAE	AFQILY	GKGI	YRNGE	IIDL	LG	VQQGL	VEKSGA	WAY	AYKGS	295		
NTDB id 1022 ACIAD RS06390 WP 004925639.1	RLDIRRIGQ....V.KEGDEI	IGSETK	VVVKNK	MAPPF	REAI	FIQILY	GKGV	NQLGEL	VDL	AV	QQNIV	QKAGAW	YSY	QGN	295	
NTDB id 1074 ABD1 RS10195 WP 000344167.1	RLDIRRIGQ....V.KEGDEI	VGSETK	VVVKNK	MAPPFKE	AI	FIQILY	GKGTN	QLGEL	VDL	AV	QQDIV	QKAGAW	YSY	QGN	295	
consensus	!***!*	*	**	*****!***!!*!!*!!*	*	*****!*!***	*****	***	***	! !****!						

logo

NTDB id 1313 DR RS12030 WP 010888966.1	RIGQGKEKTIAYIAERPMEQEIRDRVMAAIRAGNAGEAPALAPAPAA.....PEAAEA.....	363
NTDB id 600 KW2 RS01765 WP 011675413.1	KIGQGAEKAKNYLKEHQDVFDKQVRAAHGLLDSEVAETEEETTASKTAKAKKEEKAVETEEIELELED.....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	KIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIEIE	387
NTDB id 228 SPD RS09265 WP 001085462.1	KIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIEIE	387
NTDB id 194 SPR RS08825 WP 001085462.1	KIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIEIE	387
NTDB id 159 SP RS09750 WP 001085462.1	KIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIEIE	387
NTDB id 499 SM12261 RS08315 WP 078228268.1	KIGQGSSENAKKYLADNPEIFDEIDHQRVVRVQFGLIDGEEIAES....KKDE....AAQVDS..VNEEVTLDLGDLEIEIE	383
NTDB id 527 SMSK321 RS11065 WP 001085454.1	KIGQGSSENAKKYLADNPEVFAEIDHQRVVRVQFGLIDGEEAAES....KKDE....VAQVDS..VNEEVTLDLGDLEIEIE	383
NTDB id 408 SMU RS09530 WP 002262392.1	KIGQGSSENAKKFLADNPEIFDDIDHKVRVQYGLIEEDNTEEEKQSSKEK.....ETDEK..ADKNLVLELDDTIELED.	383
NTDB id 453 Spy49 1753c ACI62003.1	KIGQGSSENAKRYLADHPQLFDEIDRKVRVKFGLLEESEEEESAMAVASE.....E.....TDDLALDLNGIEIED.	378
NTDB id 115 BSU 16940 NP 389576.2	RLGQGRENAKQFLKENKDIMLMIQEQIREHYGLDNNGVVQQQAETQEEL.EFE.E.....	348
NTDB id 625 LCA RS02525 WP 011374196.1	RIGQGRENAKKNYLADHEDVEDEVRLKVRAAYGISDVPPEEDLPTTEDE.QI.NILPDDST.....EE.....	355
NTDB id 1245 Cj1673c YP 002345041.1	KLGGQGRENSKAFLEKENPEIADEITKAIQNSMGIEGMISGSEDDEGE..E.....	343
NTDB id 1214 NCTC11637 00359 SQJ03206.1	KLGGQGRENAKALLKEDKALADEITLKIKEISGSNEEIMPLPDEPLE..EM.....E.....	347
NTDB id 1211 C694 RS00795 WP 000963128.1	KLGGQGRENAKALLKEDKALADEITLKIKEISGSNEEIMPLPDEPLE..EM.....E.....	347
NTDB id 1334 RAOC RS04870 WP 004918236.1	KLGGQRDITVKELIKDNPELAEELEAKIREKLQAK.....	343
NTDB id 32998 HRM2 RS13540 WP 015904589.1	RIGQGRQNAKVFFTDNPEIFNQIQARVREALGLSSPTPKENGKEKGKAKP.....	347
NTDB id 1389 A4U84 RS07560 WP 021112712.1	KIGQGGKNNAVKWLKENPEIADKLEQEIRNTLASNPNSVLKATASDSNDES.DVEEFS.....EEEL.....	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	KIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHITEGT.....QDE.TDGERP.....EE.....	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	KIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHITEGT.....QDE.TDGERP.....EE.....	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	KIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHITEGT.....QDE.TDGERP.....EE.....	348
NTDB id 1427 RS RS02760 WP 011000510.1	RIGQGRDNCREFLRENAELAREIENKVREHLGVTPMGAV.TLAEEVEED.....	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	KIGQGGKANACKYLLKENPEIAKTLDDKLLREMLLNPENMQLIAETSSAADV.EFGAVP.....EEF.....	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	KIGQGGKANACKYLLKENPEIAKTLDDKLLREMLLNPENMQLIAETSSAADV.EFGAVP.....EEF.....	354
NTDB id 1205 PSJM300 05545 AFN77183.1	KIGQGGKANAAYLEENPEIGQIEEQQIRAKLLVTSANTKATPVAEDLADA.DI.....	347
NTDB id 1022 ACIAD RS06390 WP 004925639.1	KIGQGGKNNVIRYLEENPQISTEIEAVIREQLLTAKSDQTAA.HDETEEEP.DLL..E.....S.....	349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	KIGQGGKNNVIRYFEENNQIAEEIERNIREQLLTGTNGAVQ.I.EDEEEP.DLL..L.....ES.....	349
consensus	**!!!!***** ** ***** ***** ** *	

logo

NTDB	id	1313	DR	RS12030	WP	010888966.1	.	363
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	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	1334	RAOC	RS04870	WP	004918236.1	.	343
NTDB	id	32998	HRM2	RS13540	WP	015904589.1	.	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	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
- ☒ $\geq 50\%$ conserved