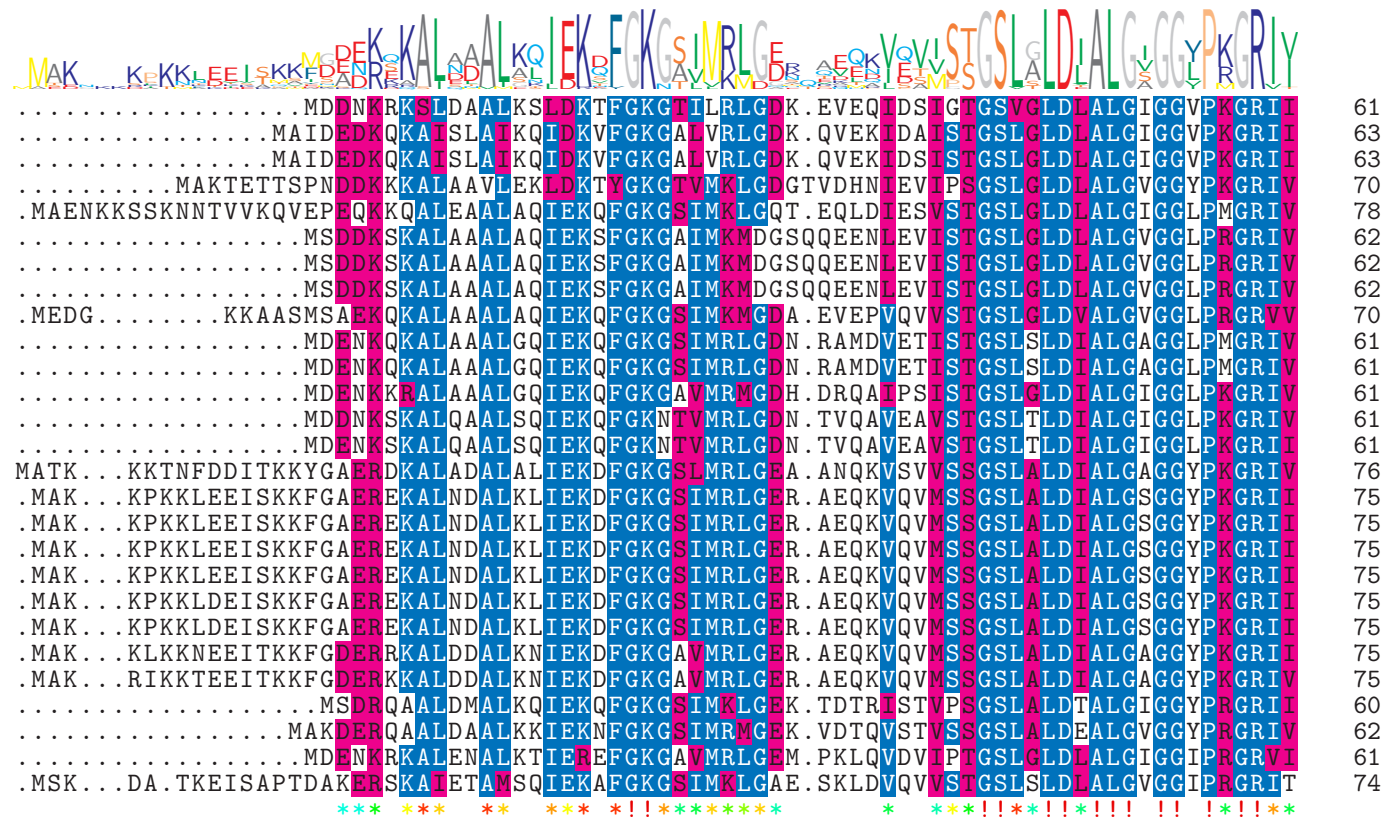


```

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 1389 AAU84 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
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 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 406069 G0600 RS09920 WP 028494039.1
NTDB id 1313 DR RS12030 WP 010888966.1
consensus

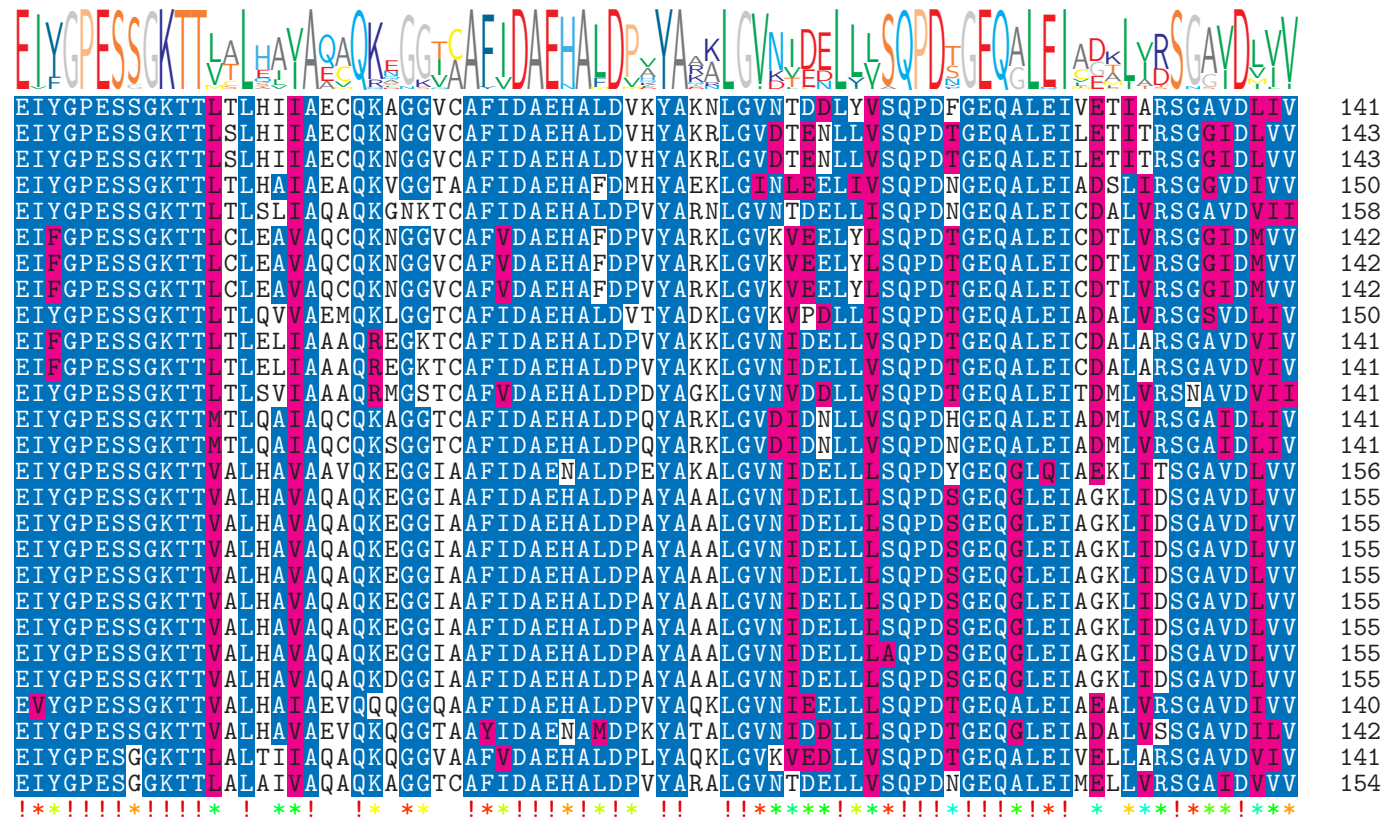
```



```

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 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
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 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 406069 GO600 RS09920 WP 028494039.1
NTDB id 1313 DR RS12030 WP 010888966.1
consensus

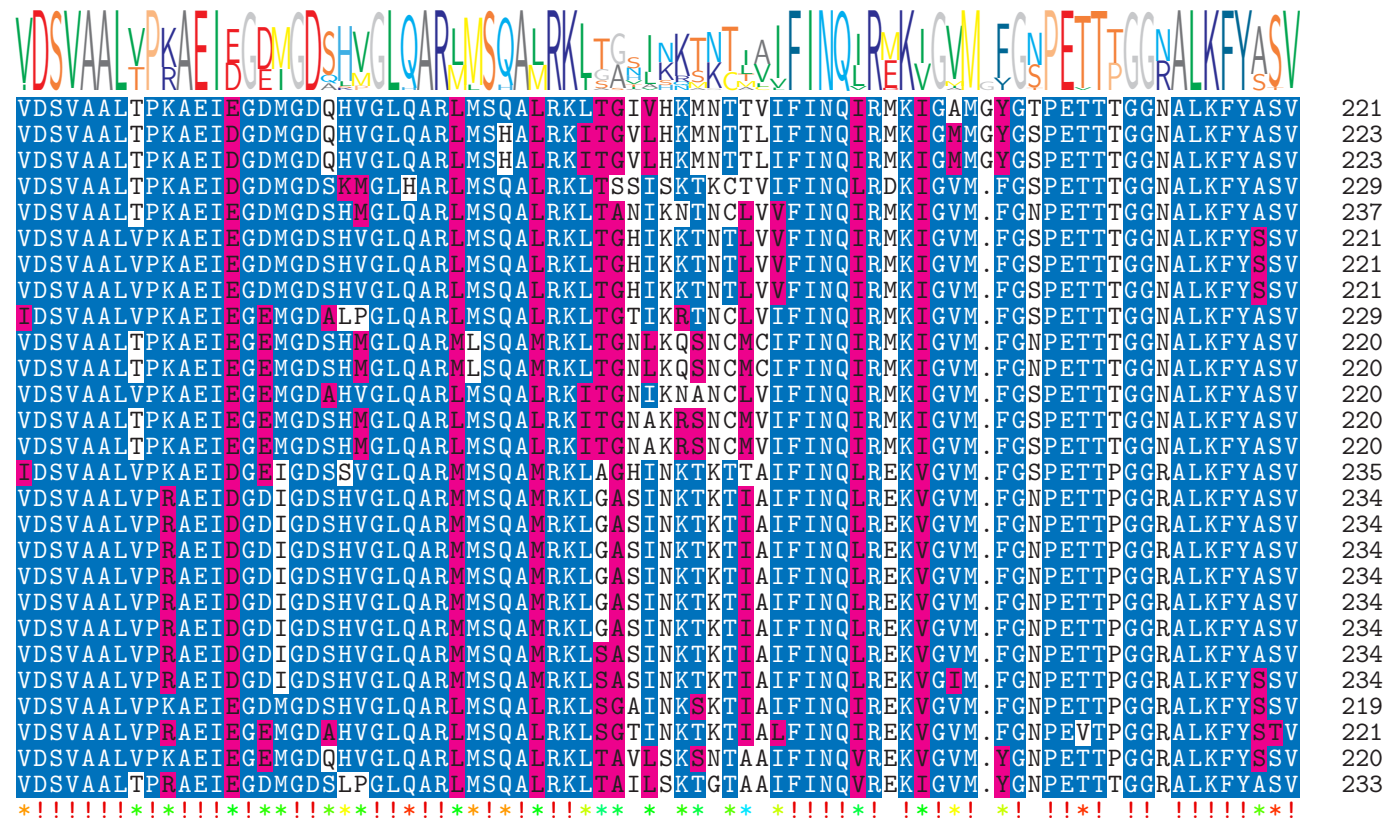
```



```

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 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
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 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 406069 GO600 RS09920 WP 028494039.1
NTDB id 1313 DR RS12030 WP 010888966.1
consensus

```



logo

NTDB id 1245 Cj1673c YP 002345041.1	RLDVRK	VAT	L.KQN	EEPI	GNRV	KV	KVV	VKN	KV	VAPP	FR	QAEF	DVM	FGEGL	SREGEL	IDY	GV	KLD	IV	DKS	GAW	FSY	KDK	296	
NTDB id 1214 NCTC11637 00359 SQJ03206.1	RIDIRRIA	AA	L.KQN	EQHI	GNRA	KA	KVV	VKN	KV	VAPP	FR	QAEF	DIM	FGEGL	SKEGEI	IDY	GV	KLD	IV	DKS	GAW	LSY	QDK	298	
NTDB id 1211 C694 RS00795 WP 000963128.1	RIDIRRIAS	L.KQN	EQHI	GNRA	KA	KVV	VKN	KV	VAPP	FR	QAEF	DIM	FGEGL	SKEGEI	IDY	GV	KLD	IV	DKS	GAW	LSY	QDK	298		
NTDB id 1334 RAOC RS04870 WP 004918236.1	RIDIRRLSD	TG	KIKDKS	GEV	IGNR	TK	V	KVV	VKN	KV	VAPP	FK	SAEF	DIM	YGEGL	SV	SKV	GEI	LD	VAT	DL	DI	QKS	309	
NTDB id 1389 A4U84 RS07560 WP 021112712.1	RLDIRRC	CGV	V.KDG	DEI	IGSE	TK	V	KVV	VKN	KV	VAPP	FR	QAEF	DIM	YGEGL	SIRM	NELL	IL	AE	ANG	F	IKK	S	312	
NTDB id 1130 NGFG RS03960 WP 003688695.1	RLDIRRTGS	I.KKG	EEV	LGNE	TR	V	KV	I	KN	KV	VAPP	FR	QAEF	DIL	YGEGL	SWE	GEL	ID	IG	V	KND	I	296		
NTDB id 1124 NGFG RS03960 WP 003688695.1	RLDIRRTGS	I.KKG	EEV	LGNE	TR	V	KV	I	KN	KV	VAPP	FR	QAEF	DIL	YGEGL	SWE	GEL	ID	IG	V	KND	I	296		
NTDB id 1123 OK783 RS03845 WP 003688695.1	RLDIRRTGS	I.KKG	EEV	LGNE	TR	V	KV	I	KN	KV	VAPP	FR	QAEF	DIL	YGEGL	SWE	GEL	ID	IG	V	KND	I	296		
NTDB id 1427 RS RS02760 WP 011000510.1	RLDIRRIGS	I.KKG	DEV	VGN	ET	K	V	KVV	VKN	KV	VAPP	FR	QAEF	DIL	YGA	GV	S	REGE	II	DL	G	VEA	K	304	
NTDB id 1165 A1552VC RS01565 WP 000344154.1	RLDIRRTGA	I.KEG	EEV	VGN	ET	R	I	K	V	V	VKN	K	I	A	APF	KE	ANT	Q	I	M	Y	G	295		
NTDB id 1142 GTF74 RS11550 WP 000344154.1	RLDIRRTGA	I.KEG	EEV	VGN	ET	R	I	K	V	V	VKN	K	I	A	APF	KE	ANT	Q	I	M	Y	G	295		
NTDB id 1205 PSJM300 05545 AFN77183.1	RLDIRRTGA	V.KEG	DEV	VGSE	TR	V	K	V	V	VKN	K	V	A	P	P	FR	QAEF	Q	I	L	Y	G	295		
NTDB id 1022 ACIAD RS06390 WP 004925639.1	RLDIRRIGQ	V.KEG	DEI	IGSE	TK	V	K	V	V	VKN	K	M	A	P	P	FR	E	A	I	F	Q	I	295		
NTDB id 1074 ABD1 RS10195 WP 000344167.1	RLDIRRIGQ	V.KEG	DEI	IGSE	TK	V	K	V	V	VKN	K	M	A	P	P	FR	E	A	I	F	Q	I	295		
NTDB id 600 KW2 RS01765 WP 011675413.1	RLDVRG	ST	KIEEGS	.GDN	KTQ	IGK	I	T	K	I	K	V	V	VKN	K	V	A	P	P	F	K	V	A	314	
NTDB id 269 KZH43 RS08665 WP 001085462.1	RLDVRG	NT	QIKGTG	.DQK	ETN	VGK	ET	K	I	K	V	V	VKN	K	V	A	P	P	F	K	E	A	V	313	
NTDB id 228 SPD RS09265 WP 001085462.1	RLDVRG	NT	QIKGTG	.DQK	ETN	VGK	ET	K	I	K	V	V	VKN	K	V	A	P	P	F	K	E	A	V	313	
NTDB id 194 SPR RS08825 WP 001085462.1	RLDVRG	NT	QIKGTG	.DQK	ETN	VGK	ET	K	I	K	V	V	VKN	K	V	A	P	P	F	K	E	A	V	313	
NTDB id 159 SP RS09750 WP 001085462.1	RLDVRG	NT	QIKGTG	.DQK	ETN	VGK	ET	K	I	K	V	V	VKN	K	V	A	P	P	F	K	E	A	V	313	
NTDB id 499 SM12261 RS08315 WP 078228268.1	RLDVRG	ST	QIKGTG	.DQK	DTN	VGK	ET	K	I	K	V	V	VKN	K	V	A	P	P	F	K	E	A	F	313	
NTDB id 527 SMSK321 RS11065 WP 001085454.1	RLDVRG	ST	QIKGTG	.DQK	DTN	VGK	ET	K	I	K	V	V	VKN	K	V	A	P	P	F	K	E	A	F	313	
NTDB id 453 Spy49 1753c ACI62003.1	RLDVRG	T	TQIKGTG	.DQK	DSS	IGK	ET	K	I	K	V	V	VKN	K	V	A	P	P	F	K	V	A	E	313	
NTDB id 408 SMU RS09530 WP 002262392.1	RLDVRG	NT	QIKGTG	.EQK	DSN	IGK	ET	K	I	K	V	V	VKN	K	V	A	P	P	F	K	E	A	F	313	
NTDB id 115 BSU 16940 NP 389576.2	RL	EV	RAE	QLKQGN	DVM	GN	TK	I	K	V	V	VKN	K	V	A	P	P	F	R	T	A	E	V	294	
NTDB id 625 LCA RS02525 WP 011374196.1	RL	EV	RAE	TIKNGT	DM	IGN	R	A	R	I	K	V	V	VKN	K	V	A	P	P	F	K	V	A	296	
NTDB id 406069 G0600 RS09920 WP 028494039.1	RLDVRK	SG	QPIKVG	NEA	V	G	I	K	V	V	V	VKN	K	L	A	P	P	FR	E	A	E	I	Y	296	
NTDB id 1313 DR RS12030 WP 010888966.1	RLDVRK	I	GQPTKVG	NDA	V	A	N	T	V	K	I	K	T	V	K	N	K	V	A	A	P	F	K	309	
consensus	!	***	!	*		*		*	*	*****	!*	***	!!	***	!!	***	*	*****	!*	***	*****	***	***	!	!*****

logo

NTDB id 1245 Cj1673c YP 002345041.1	KIGQGRENKAFLENPEIADEITKATQNSMGI	IEGMISGSEDDE..GEE.....	343
NTDB id 1214 NCTC11637 00359 SQJ03206.1	KLGGQRENAKALLKEDKALADEITLKIKESIGS	NEEIIMPLPDEP..LEEME.....	347
NTDB id 1211 C694 RS00795 WP 000963128.1	KLGGQRENAKALLKEDKALADEITLKIKESIGS	NEEIIMPLPDEP..LEEME.....	347
NTDB id 1334 RAOC RS04870 WP 004918236.1	KLGGGRDITVKELTKDNPELAEELEAKIREKLQAK		343
NTDB id 1389 A4U84 RS07560 WP 021112712.1	KIGQGGKNNNAVKWLKENPEIADKLEQEI	RNTLASNPNSVLKATASDSNDESVDV.EEFSE.....EEL.....	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	KIGQGGKDNVRVWLKENPEISDEIDAKIRALNGV	EMHITEGT.....QDET.D.GERPE.....E.....	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	KIGQGGKDNVRVWLKENPEISDEIDAKIRALNGV	EMHITEGT.....QDET.D.GERPE.....E.....	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	KIGQGGKDNVRVWLKENPEISDEIDAKIRALNGV	EMHITEGT.....QDET.D.GERPE.....E.....	348
NTDB id 1427 RS RS02760 WP 011000510.1	RIGQGRDNCREFLRENAELAREIENKVRHLGV	TPMGAV.TLAEEVEED.....	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	KIGQGGKANACKYLKENPEIAKTLDKKLREMLLN	PENMQLIAETSSAADDVEF.GAVPE.....EF.....	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	KIGQGGKANACKYLKENPEIAKTLDKKLREMLLN	PENMQLIAETSSAADDVEF.GAVPE.....EF.....	354
NTDB id 1205 PSJM300 05545 AFN77183.1	KIGQGGKANAACKYLEENPEIGQEIEEQIRAKLLV	TSANTKATPVAEDLADADI.....	347
NTDB id 1022 ACIAD RS06390 WP 004925639.1	KIGQGGKNNVIRYLEENPQISTEIEEAVIREQLLT	TKASDQTAA.HDETEEEPDL.L..ES.....	349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	KIGQGGKNNVIRYFEENNQIAEEIERNIREQLLT	TGTNGAVQ.I.EDEEEDPD.L..LE.....S.....	349
NTDB id 600 KW2 RS01765 WP 011675413.1	KIGQGAEEKAKNYLKEHQDVFEIDHKKVRAAHGL	LD..DSEVAETEEETTASKTAKAKKEEKAVETEEIELELED.....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	KIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGL	ID..GEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIE	385
NTDB id 228 SPD RS09265 WP 001085462.1	KIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGL	ID..GEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIE	385
NTDB id 194 SPR RS08825 WP 001085462.1	KIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGL	ID..GEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIE	385
NTDB id 159 SP RS09750 WP 001085462.1	KIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGL	ID..GEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIE	385
NTDB id 499 SM12261 RS08315 WP 078228268.1	KIGQGSSENAKKYLADNPEIFDEIDHQVRVQFGL	ID..GEEIAES....KKDE....AAQVDS..VNEEVTLDLGDELEIE	381
NTDB id 527 SMSK321 RS11065 WP 001085454.1	KIGQGSSENAKKYLADNPEVFAEIDHQVRVQFGL	ID..GEEAAES....KKDE....VAQVDS..VNEEVTLDLGDELEIE	381
NTDB id 453 Spy49 1753c ACI62003.1	KIGQGSSENAKRYLADHPQLFDEIDRKVRVKFGL	LE..ESEEESAMAVASE.....E.....TDDLALDLNGIEIE	377
NTDB id 408 SMU RS09530 WP 002262392.1	KIGQGSSENAKKFLADNPEIFDDIDHKVRVQYGL	IE..EDNTEEKQSSKEK.....ETDEK..ADKNLVLELDDTIELE	382
NTDB id 115 BSU 16940 NP 389576.2	RLGQGGRENAKQFLKENKDIMLMIQEQIREHYGL	DN..NGVVQQAEETQEEL.EFE.E.....	348
NTDB id 625 LCA RS02525 WP 011374196.1	RIGQGGRENAKNYLADHEDVEDEVRLKVRAYGIS	D..VPEEDLPTTEDE.QI.NILPDDST....EE.....	355
NTDB id 406069 G0600 RS09920 WP 028494039.1	RLGQGGKEKAADYLRERPELLEEIRAKVLERAEH	VVLVGSEEGEE.....	340
NTDB id 1313 DR RS12030 WP 010888966.1	RIGQGGKEKTIAIYIAERPMEQEIRDRVMAAIRA	GNAGEAPALA...PAPAAPEAAEA.....	363
consensus	**!!!!***** ** * *** ***** ** *		

logo

		IEE	
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 RAO C 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
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 406069 G0600 RS09920 WP 028494039.1	...		340
NTDB id 1313 DR RS12030 WP 010888966.1	...		363
consensus			

- X non conserved
- X similar
- X ≥ 50% conserved