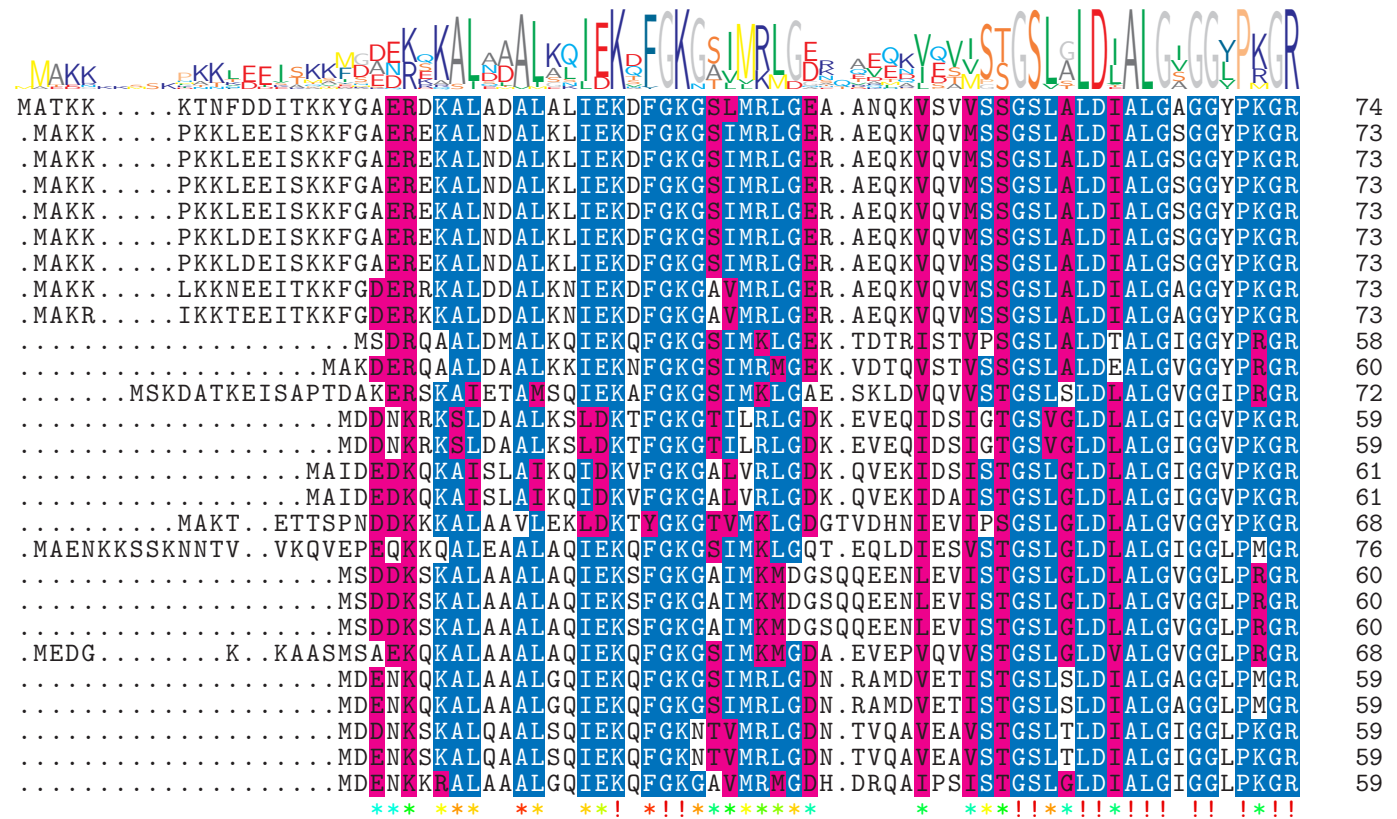


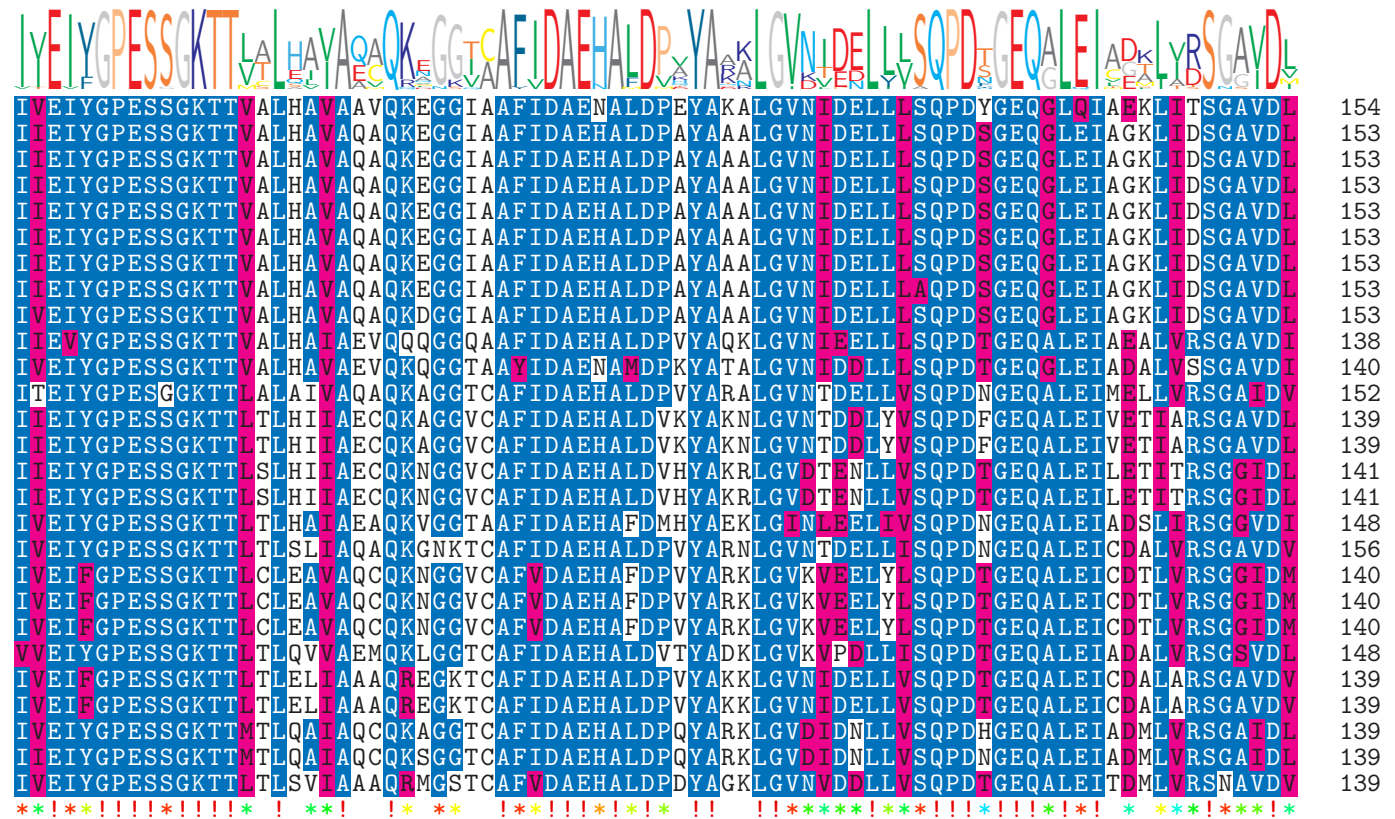
NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 453 Spy49 1753c 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 1313 DR RS12030 WP 010888966.1
NTDB id 92343 AE123 RS08995 WP 002851424.1
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 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus



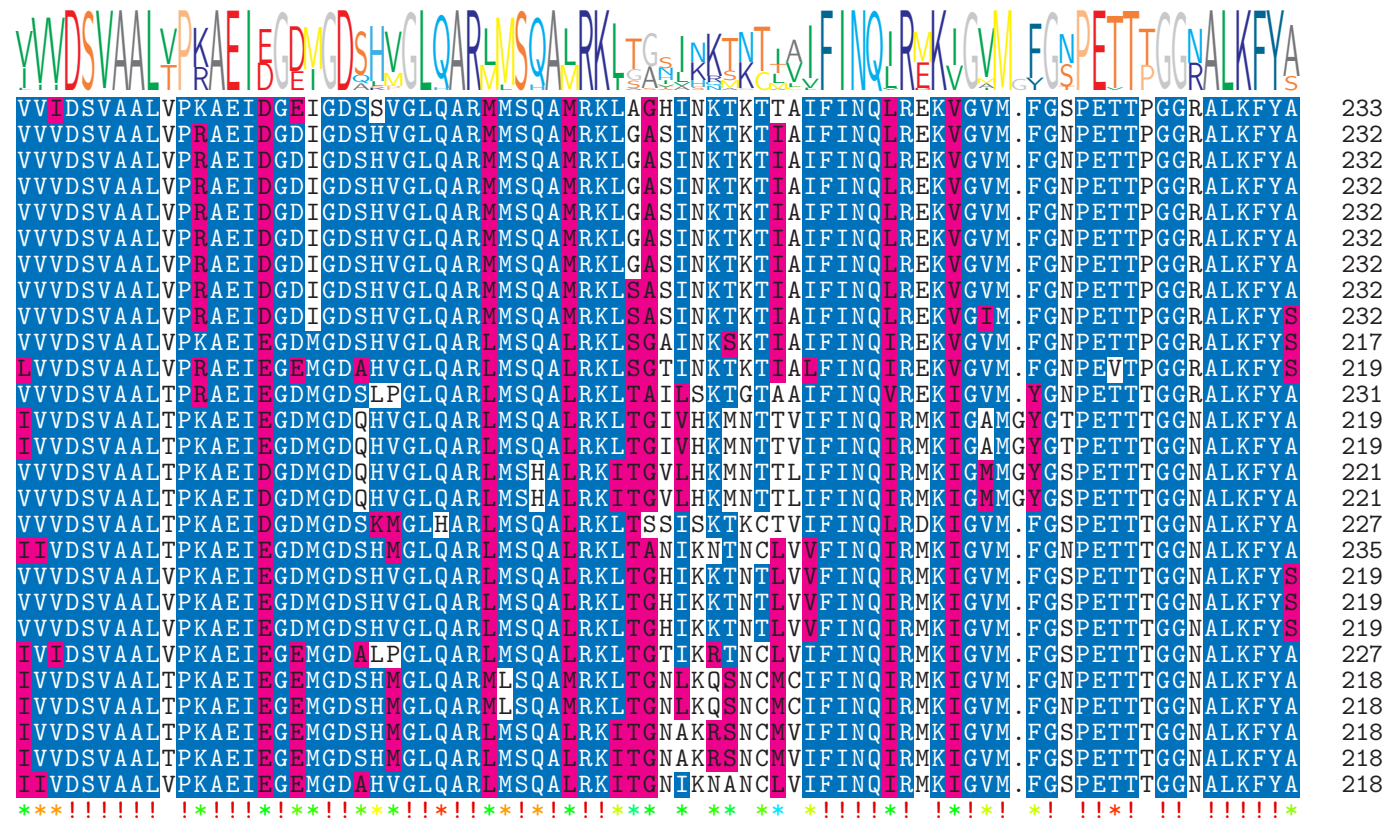
```

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 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 92343 AE123 RS08995 WP 002851424.1
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 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1205 PSJM300 05545 AFN77183.1
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 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 92343 AE123 RS08995 WP 002851424.1
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 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus



logo

NTDB id 600 KW2 RS01765 WP 011675413.1	SVRLDVRG	STKIEEGS	.GDNKTQ	IGKITK	IKVVKNKV	VAPPFKEA	VALVDIM	FGEGIS	STGELIN	IAVEEG	ITKKSG	AWFAYN	312						
NTDB id 269 KZH43 RS08665 WP 001085462.1	SVRLDVRG	NTQIKGTG	.DQKETN	VGKETK	IKVVKNKV	VAPPFKEA	AVVEIM	YGEGIS	KTGELL	KIASDL	DIKKAG	AWYSYK	311						
NTDB id 228 SPD RS09265 WP 001085462.1	SVRLDVRG	NTQIKGTG	.DQKETN	VGKETK	IKVVKNKV	VAPPFKEA	AVVEIM	YGEGIS	KTGELL	KIASDL	DIKKAG	AWYSYK	311						
NTDB id 194 SPR RS08825 WP 001085462.1	SVRLDVRG	NTQIKGTG	.DQKETN	VGKETK	IKVVKNKV	VAPPFKEA	AVVEIM	YGEGIS	KTGELL	KIASDL	DIKKAG	AWYSYK	311						
NTDB id 159 SP RS09750 WP 001085462.1	SVRLDVRG	NTQIKGTG	.DQKETN	VGKETK	IKVVKNKV	VAPPFKEA	AVVEIM	YGEGIS	KTGELL	KIASDL	DIKKAG	AWYSYK	311						
NTDB id 499 SM12261 RS08315 WP 078228268.1	SVRLDVRG	STQIKGTG	.DQKDTN	VGKETK	IKVVKNKV	VAPPFKEA	AFVEIM	YGEGIS	KTGELL	KIASDL	DIKKAG	AWYSYK	311						
NTDB id 527 SMSK321 RS11065 WP 001085454.1	SVRLDVRG	STQIKGTG	.DQKDTN	VGKETK	IKVVKNKV	VAPPFKEA	AFVEIM	YGEGIS	KTGELL	KIASDL	DIKKAG	AWYSYK	311						
NTDB id 453 Spy49 1753c ACI62003.1	SVRLDVRG	TQIKGTG	.DQKDS	IGKETK	IKVVKNKV	VAPPFKEA	AEVEIM	YGEGIS	RTGELV	KIASDL	DIQKAG	AWFSYN	311						
NTDB id 408 SMU RS09530 WP 002262392.1	SVRLDVRG	NTQIKGTG	.EQKDSN	IGKETK	IKVVKNKV	VAPPFKEA	AFVEII	YGEGIS	RTGELV	KIASDL	GIIQKAG	AWYSYN	311						
NTDB id 115 BSU 16940 NP 389576.2	SVRLEVRRA	EAQLKQGN		DVMGNK	TKIKVVKNKV	VAPPFR	TAEVDIM	YGEGIS	KEGEI	IDLGT	ELDIVQ	KSWSYSYE	292						
NTDB id 625 LCA RS02525 WP 011374196.1	TVRLEVRRA	ETIKNGT		DMIGNR	ARIKVVKNKV	VAPPFK	VAEVDIM	YGGIS	RTGELV	DMAVEK	DIINKSG	SWSYG	294						
NTDB id 1313 DR RS12030 WP 010888966.1	SVRLDVRK	IGQ....	PTKVG	NDAAV	NTVKIK	TVKNK	VAA	PFKE	VELAL	LVYGK	GFDQLS	DLVGLA	ADMDI	IKKAGS	FYSYG	307			
NTDB id 92343 AEI23 RS08995 WP 002851424.1	SVRLDVRK	VAT....	L.KQNE	EEP	IGNRV	KVKVVKNKV	VAPPFR	QAEFD	VMFGE	GLSRE	GELIDY	GVKLDI	VDKSG	AWFSYK	294				
NTDB id 1245 Cj1673c YP 002345041.1	SVRLDVRK	VAT....	L.KQNE	EEP	IGNRV	KVKVVKNKV	VAPPFR	QAEFD	VMFGE	GLSRE	GELIDY	GVKLDI	VDKSG	AWFSYK	294				
NTDB id 1211 C694 RS00795 WP 000963128.1	SVRIDIRRI	AS....	L.KQNE	EQH	IGNRA	KA	VVVKNKV	VAPPFR	EAEFD	IMFGE	GISKE	GEI	IDYGV	KLDI	VDKSG	AWLSYQ	296		
NTDB id 1214 NCTC11637 00359 SQJ03206.1	SVRIDIRRI	AA....	L.KQNE	EQH	IGNRA	KA	VVVKNKV	VAPPFR	EAEFD	IMFGE	GISKE	GEI	IDYGV	KLDI	VDKSG	AWLSYQ	296		
NTDB id 1334 RAOC RS04870 WP 004918236.1	SVRIDIRRS	LSDTG	KIKDKS	GEV	IGNR	TKV	VVVKNKV	VAPPFK	SAEFD	IMYGE	GVS	KVGEI	LDVAT	DLDI	IQKSG	SWFSYQ	307		
NTDB id 1389 A4U84 RS07560 WP 021112712.1	SVRLDIRR	CGV....	V.KDG	DEI	IGSE	TKV	VVVKNKV	VAPPFR	REVQ	FDIMY	GEIS	RMNELL	ILAE	ANGFI	IKKSG	AWFSYD	310		
NTDB id 1130 NGFG RS03960 WP 003688695.1	SVRLDIRR	TGS....	I.KKG	EEV	LGNE	TRV	KVI	KNKV	VAPPFR	QAEFD	DILY	GEIS	WEGEL	IDIGV	KNDI	INKSG	AWYSYN	294	
NTDB id 1124 NGFG RS03960 WP 003688695.1	SVRLDIRR	TGS....	I.KKG	EEV	LGNE	TRV	KVI	KNKV	VAPPFR	QAEFD	DILY	GEIS	WEGEL	IDIGV	KNDI	INKSG	AWYSYN	294	
NTDB id 1123 OK783 RS03845 WP 003688695.1	SVRLDIRR	TGS....	I.KKG	EEV	LGNE	TRV	KVI	KNKV	VAPPFR	QAEFD	DILY	GEIS	WEGEL	IDIGV	KNDI	INKSG	AWYSYN	294	
NTDB id 1427 RS RS02760 WP 011000510.1	SVRLDIRR	IGS....	I.KKG	DEV	VGN	ETK	VVVKNKV	VAPPFR	EAI	FDILY	GAGV	SREGE	IIDL	GV	EAKV	VVEKSG	AWYSYN	302	
NTDB id 1165 A1552VC RS01565 WP 000344154.1	SVRLDIRR	TGA....	I.KEG	EEV	VGN	ETRI	KVVKNK	IA	APFKE	ANTQ	IMYGG	GFN	REGEL	IDL	GV	KHKM	VVEKSG	AWYSYN	293
NTDB id 1142 GTF74 RS11550 WP 000344154.1	SVRLDIRR	TGA....	I.KEG	EEV	VGN	ETRI	KVVKNK	IA	APFKE	ANTQ	IMYGG	GFN	REGEL	IDL	GV	KHKM	VVEKSG	AWYSYN	293
NTDB id 1022 ACIAD RS06390 WP 004925639.1	SVRLDIRR	IGQ....	V.KEG	DEI	IGSE	TKV	VVVKNK	MAPPF	REAI	FQILY	GKGV	NQLG	ELVD	LAV	QQN	IVQK	AGAWYSYQ	293	
NTDB id 1074 ABD1 RS10195 WP 000344167.1	SVRLDIRR	IGQ....	V.KEG	DEI	IGSE	TKV	VVVKNK	MAPPF	REAI	FQILY	GKGV	NQLG	ELVD	LAV	QQN	IVQK	AGAWYSYQ	293	
NTDB id 1205 PSJM300 05545 AFN77183.1	SVRLDIRR	TGA....	V.KEG	DEV	VGS	ETRV	KVVKNKV	VAPPFR	QAEFQ	ILY	GKGI	YRN	GEI	IDL	GV	QQGL	LVEKSG	AWAYK	293
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 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 92343 AEI23 RS08995 WP 002851424.1
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 1022 ACIAD RS06390 WP 0049255639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1205 PSJM300 Q5545 AEN77183.1

```

consensus

DEKIGQGAETAKAKNYLKEHQDVFEIDHKVRAAHGLDDSEVAETEETTASKTKAKAKKEEKAVETEEIELELED 387
 DEKIGQGSENACKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE . . . PKKEEA . VNEEVPLDLGDELEIE 385
 DEKIGQGSENACKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE . . . PKKEEA . VNEEVPLDLGDELEIE 385
 DEKIGQGSENACKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE . . . PKKEEA . VNEEVPLDLGDELEIE 385
 DEKIGQGSENACKKYLAHNPEIFDEIDHQRVVFGLIDGEEIAES . . . KKDE . . . AAQVDS . VNEEVTLDLGDELEIE 381
 DEKIGQGSENACKKYLANPVEFAEIDHQRVVFGLIDGEEAAES . . . KKDE . . . VAQVDS . VNEEVTLDLGDELEIE 381
 GEKIGQGSENACKRYLADHPQLFDEIDRKVRVKFGLLEESEESAAMAVASE . . . E TDDLALDNGIEIE 377
 GEKIGQGSENACKFLADNPFIIDDIDHKVRVQYGLIEDNTEEKQSSKEK . . . ETDEK . ADKNLVLELDDTIELE 382
 EERLGQGGRENAKQFLKENKDIMLMIQEQIREHYGLDNNGVVQQAEETQEEL.EFE.E 348
 SERIGQGGRENAKNYLADHEDVEDEVRLKVRAAYGISDVPEEDLPPTTEDE.QI.NILPDDST . . . EE . . . 355
 DERIGGQKEKTITAIYIAERPMEQEIRDRVMAAIRAGNAGEAPALAPAPAPEAAE . A 363
 DKKLGGGRENSKAFLKENPEIADEITKAIQNSMGIEGMI . . . SGSEDD . EGEE . E 343
 DKKLGGGRENSKAFLKENPEIADEITKAIQNSMGIEGMI . . . SGSEDD . EGEE . E 343
 DKKLGGGRENAKALLKEDKALAIDEITLKIKESIGSNEEI . . . MPLPDE . PLE . EME 347
 DKKLGGGRENAKALLKEDKALAIDEITLKIKESIGSNEEI . . . MPLPDE . PLE . EME 347
 DTKLGGGRDTPVKELIKDNPELAELEAKIREKLQAK 343
 GTKIGQGGKNNAVKWLENKENPEIADKLEGEIRNTLASNPNS . . . VLKATASDSND . ESDVEEFSEEEL . . . 372
 GAKIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI . . . TEGTQDETGDGE . R PEE 348
 GAKIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI . . . TEGTQDETGDGE . R PEE 348
 GAKIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI . . . TEGTQDETGDGE . R PEE 348
 GERIGQGGRCREFLRENAELAREIENKVRREHLGVTPMG . . . AVTLA.EEEVE.D 352
 GDKIGQGGKANACKYLKENPEIAKTLDKKLREMLLNPNEM . . . QLIAETSSAAD . DVEFGAVPEEF . . . 354
 GDKIGQGGKANACKYLKENPEIAKTLDKKLREMLLNPNEM . . . QLIAETSSAAD . DVEFGAVPEEF . . . 354
 GNKIGQGGKNNVIRYLEENPQISTEIEAVIREQLLTASKD . . . QTAA.HDETEE . EPDLL . ES 349
 GNKIGQGGKNNVIRYFEENNQIAEIEIERNIREQLLTTGTN . . . GAVQ.I.EDEE . EPDLL . LES 349
 GS KIGQGGKANAAKYLENPEIQEIEEQIRAKLLVTSAN . . . TKATPVAEDLA . DADI 347

logo

		IEE	
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 1313 DR RS12030 WP 010888966.1	...		363
NTDB id 92343 AEI23 RS08995 WP 002851424.1	...		343
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 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 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			

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