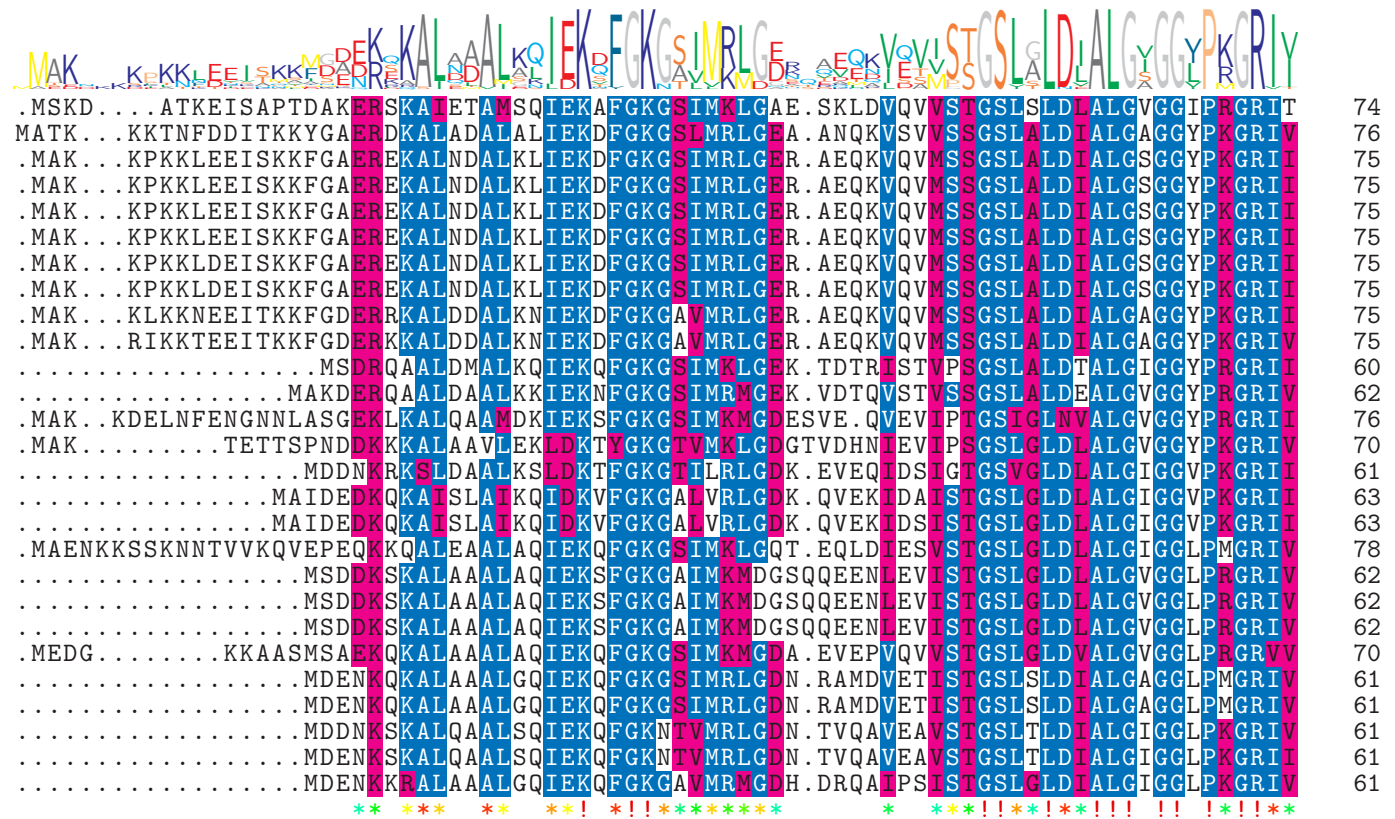


```

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 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 349038 EYA81 RS03050 WP 117601636.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 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

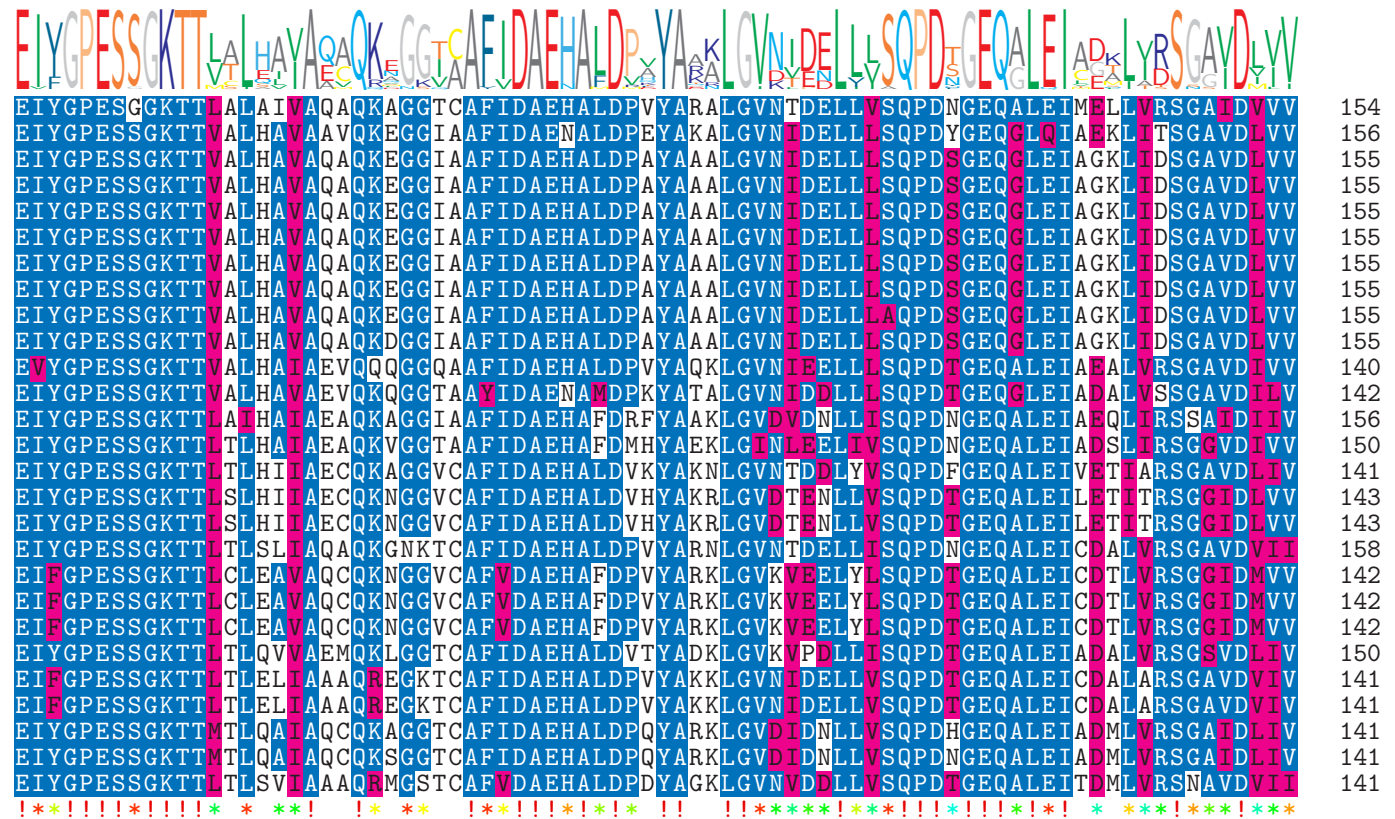
```



```

NTDB id 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 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 349038 EYA81 RS03050 WP 117601636.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 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

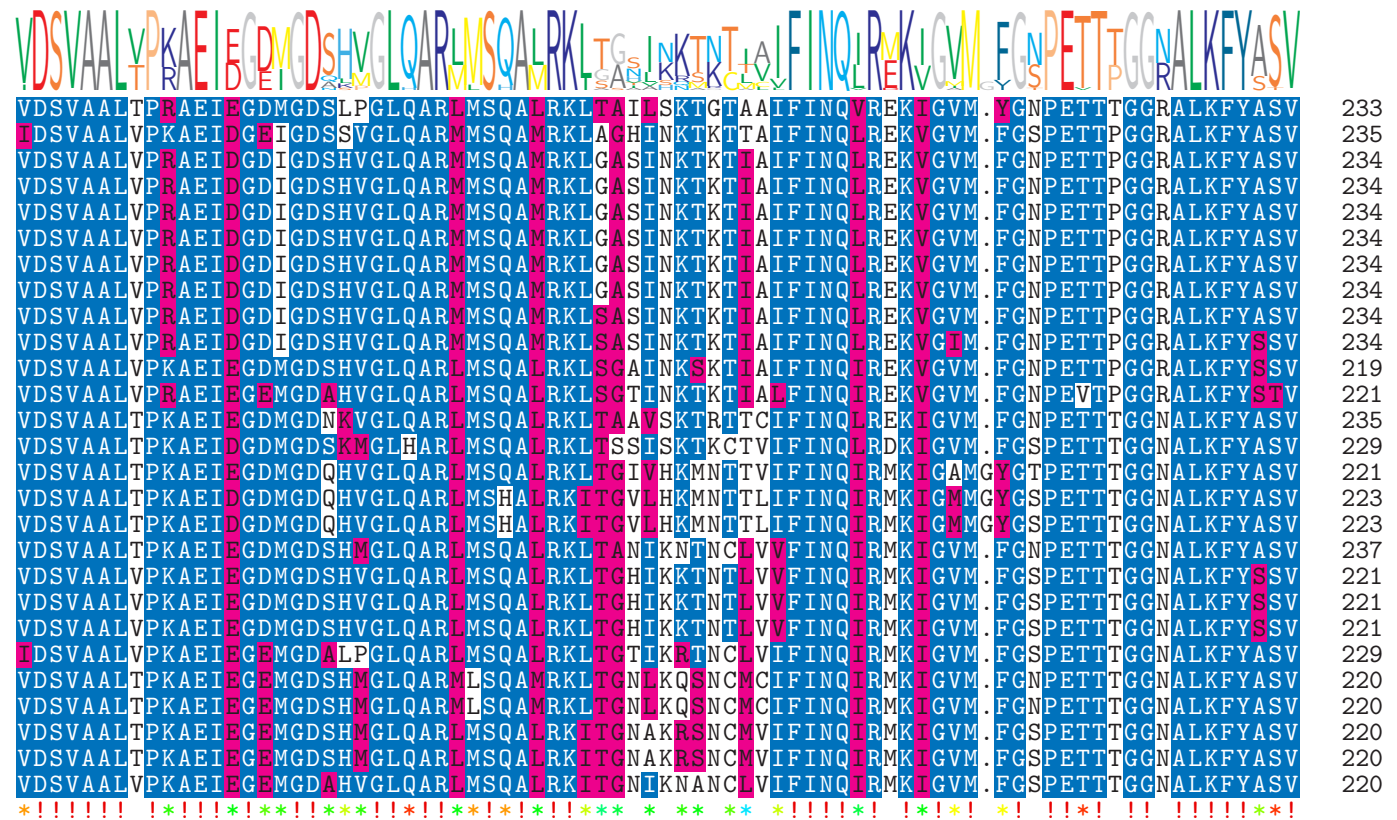
```



```

NTDB id 1313 DR RS012030 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 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 349038 EYA81 RS03050 WP 117601636.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 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 1313 DR RS12030 WP 010888966.1	RLDVRKIGQPT...	KVG...	NDAVANTVKKIKTVKNKVAAPPFKEVELALIVYGKGFQDLS	DLVGLAADMDIIKKAGSFYS	305
NTDB id 600 KW2 RS01765 WP 011675413.1	RLDVRGSTK....	IEEGSGDNKTQ	IGKITKIKVVKNKVAPPFKVALVDIMFEGEGISSTGELLNIAVEEGIIKKSGAWFA		310
NTDB id 269 KZH43 RS08665 WP 001085462.1	RLDVRGNTQ....	IKGTGDQKETNVGKETKIKVVKNKVAPPFKEAVVEIMYGEGISKTGELLKIASDLDIIKKAGAWYS			309
NTDB id 228 SPD RS09265 WP 001085462.1	RLDVRGNTQ....	IKGTGDQKETNVGKETKIKVVKNKVAPPFKEAVVEIMYGEGISKTGELLKIASDLDIIKKAGAWYS			309
NTDB id 194 SPR RS08825 WP 001085462.1	RLDVRGNTQ....	IKGTGDQKETNVGKETKIKVVKNKVAPPFKEAVVEIMYGEGISKTGELLKIASDLDIIKKAGAWYS			309
NTDB id 159 SP RS09750 WP 001085462.1	RLDVRGNTQ....	IKGTGDQKETNVGKETKIKVVKNKVAPPFKEAVVEIMYGEGISKTGELLKIASDLDIIKKAGAWYS			309
NTDB id 499 SM12261 RS08315 WP 078228268.1	RLDVRGSTQ....	IKGTGDQKDTNVGKETKIKVVKNKVAPPFKEAFVEIMYGEGISKTGELLKIASDLDIIKKAGAWYS			309
NTDB id 527 SMSK321 RS11065 WP 001085454.1	RLDVRGSTQ....	IKGTGDQKDTNVGKETKIKVVKNKVAPPFKEAFVEIMYGEGISKTGELLKIASDLDIIKKAGAWYS			309
NTDB id 453 Spy49 1753c ACI62003.1	RLDVRGTTQ....	IKGTGDQKDSSIGKETKIKVVKNKVAPPFKVAEVEIMYGEGISRTGELVKIASDLDIIQKAGAWFS			309
NTDB id 408 SMU RS09530 WP 002262392.1	RLDVRGNTQ....	IKGTGEQKDSNIGKETKIKVVKNKVAPPFKEAFVEIITYEGEGISRTGELVKIASDLGIIQKAGAWYS			309
NTDB id 115 BSU 16940 NP 389576.2	RLEVRRAEQ....	LKQGN....	DVMGNKTKIKVVKNKVAPPFRTAEVDIMYGEGISKEGEIIDLGTELDIVQKSGSWYS		290
NTDB id 625 LCA RS02525 WP 011374196.1	RLEVRRAET....	IKNGT....	DMIGNRARIKVVKNKVAPPFKVAEVDIMYGEGISRTGELVDMAVEKDIINKSGSWYS		292
NTDB id 349038 EYA81 RS03050 WP 117601636.1	RLDIRGSQA....	IKNG....	DEVIGKQTKVKVVKNKVAPPFRRAEFDIMFEGEGISRAGEIIDLGAELGIKKSGSWFS		306
NTDB id 1334 RAO RS04870 WP 004918236.1	RDIRRSLSDTGKIKDKS...	GEVIGNRTKVKVVKNKVAPPFKSAEFDIMYGEGVSKVGEILDVATDLDIIQKSGSWFS			305
NTDB id 1245 Cj1673c YP 002345041.1	RLDVRKVAT....	LKQN....	EEPIGNRVKVKVVKNKVAPPFRQAEFDVMFGEGLSREGELIDYGVKLDIVDKSGAWFS		292
NTDB id 1214 NCTC11637 00359 SQJ03206.1	RDIRRIAIAA....	LKQN....	EQHIGNRAKAKVVKNKVAPPFREAEFDIMFEGEGISKEGEIIDYGVKLDIVDKSGAWLS		294
NTDB id 1211 C694 RS00795 WP 000963128.1	RDIRRIAS....	LKQN....	EQHIGNRAKAKVVKNKVAPPFREAEFDIMFEGEGISKEGEIIDYGVKLDIVDKSGAWLS		294
NTDB id 1389 A4U84 RS07560 WP 021112712.1	RLDIRRCGV....	VKDG....	DEIIGSETKVKVVKNKVAPPFREVQFDIMYGEGISRMNELLILAEANGFIKKSGAWFS		308
NTDB id 1130 NGFG RS03960 WP 003688695.1	RLDIRRTGS....	IKKG....	EEVLGNETRVRKVIKNKVAPPFRQAEFDILYEGEGISWEGELIDIGVKNDIINKSGAWYS		292
NTDB id 1124 NGFG RS03960 WP 003688695.1	RLDIRRTGS....	IKKG....	EEVLGNETRVRKVIKNKVAPPFRQAEFDILYEGEGISWEGELIDIGVKNDIINKSGAWYS		292
NTDB id 1123 OK783 RS03845 WP 003688695.1	RLDIRRTGS....	IKKG....	EEVLGNETRVRKVIKNKVAPPFRQAEFDILYEGEGISWEGELIDIGVKNDIINKSGAWYS		292
NTDB id 1427 RS RS02760 WP 011000510.1	RLDIRRIGS....	IKKG....	DEVVGNETKVKVVKNKVAPPFREAIQFDILYGAGVSREGEIIDLGVEAKVVEKSGAWYS		300
NTDB id 1165 A1552VC RS01565 WP 000344154.1	RLDIRRTGA....	IKEG....	EEVVGNETRIKVVKNKIAAPFKEANTQIMYGQGFNREGELIDLGVKHKMVEKSGAWYS		291
NTDB id 1142 GTF74 RS11550 WP 000344154.1	RLDIRRTGA....	IKEG....	EEVVGNETRIKVVKNKIAAPFKEANTQIMYGQGFNREGELIDLGVKHKMVEKSGAWYS		291
NTDB id 1022 ACIAD RS06390 WP 004925639.1	RLDIRRIGQ....	VKEG....	DEIVGSETKVKVVKNKMAPPFREAIQFQILYGKGVNQLGELVDLAVQQNIVQKAGAWYS		291
NTDB id 1074 ABD1 RS10195 WP 000344167.1	RLDIRRIGQ....	VKEG....	DEIVGSETKVKVVKNKMAPPFREAIQFQILYGKGTNQLGELVDLAVQQDIVQKAGAWYS		291
NTDB id 1205 PSJM300 05545 AFN77183.1	RLDIRRTGA....	VKEG....	DEVVGSETRVRKVVKNKVAPPFRQAEFQILYGKGIYRNGEIIDLGVQQGLVEKSGAWYA		291
consensus	!***!*	**	* ** *****!*****!*****!*****	* *****!*****!***** ***** *	

logo

NTDB id 1313 DR RS12030 WP 010888966.1	YGDGERIGQGKEKTIAYIAERP	MEQEIRDRVMAAIRAGNAGEAPALAPAPAA.....PEAAE.....A.....	363					
NTDB id 600 KW2 RS01765 WP 011675413.1	YNDEKIGQGA	EKAKNYLKEHQDVFEIDHKKVRAAHGLDDSEVAETEEETTAS	KTAKAKKEEKAVETEEIELELED... 387					
NTDB id 269 KZH43 RS08665 WP 001085462.1	YKDEKIGQGS	ENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKK	DE....PKKEEA..VNEEVPLDLGDELE 383					
NTDB id 228 SPD RS09265 WP 001085462.1	YKDEKIGQGS	ENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKK	DE....PKKEEA..VNEEVPLDLGDELE 383					
NTDB id 194 SPR RS08825 WP 001085462.1	YKDEKIGQGS	ENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKK	DE....PKKEEA..VNEEVPLDLGDELE 383					
NTDB id 159 SP RS09750 WP 001085462.1	YKDEKIGQGS	ENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKK	DE....PKKEEA..VNEEVPLDLGDELE 383					
NTDB id 499 SM12261 RS08315 WP 078228268.1	YKDEKIGQGS	ENAKKYLAADNPEIFDEIDHQRVVRVQFGLIDGEEIAES...	KKDE....AAQVDS..VNEEVTLDLGDELE 379					
NTDB id 527 SMSK321 RS11065 WP 001085454.1	YKDEKIGQGS	ENAKKYLAADNPEVFAEIDHQRVVRVQFGLIDGEEAAES...	KKDE....VAQVDS..VNEEVTLDLGDELE 379					
NTDB id 453 Spy49 1753c ACI62003.1	YNGEKIGQGS	ENAKRYLADHPQLFDEIDRKVRVKFGLLEESSEESAMAVASE	E.....TDDLALDLNGIE 375					
NTDB id 408 SMU RS09530 WP 002262392.1	YNGEKIGQGS	ENAKKFLADNPEIFDDIDHKVRVQYGLIEEDNTEEKQSSKEK	ETDEK..ADKNLVLELDDTIE 380					
NTDB id 115 BSU 16940 NP 389576.2	YEEERLGGQGR	ENAKQFLKENKDIMLMIQEQIREHYGLDNNGVVQQQAETQE	EL.EFE.E..... 348					
NTDB id 625 LCA RS02525 WP 011374196.1	YGSE	RIGQGR	ENAKNYLADHEDVEDEVRLKVR	AAAYGISDVPEEDLPTTEDE.QI.NILPDDST.....EE..... 355				
NTDB id 349038 EYA81 RS03050 WP 117601636.1	YNET	KIAQGRDA	AAQVIL	DNPEL	AELEGL	IFAE	LRKDK..... 345	
NTDB id 1334 RAOC RS04870 WP 004918236.1	YQDT	KLGQGR	DTVKELIK	DNPEL	AELEAKI	REKLQAK..... 343		
NTDB id 1245 Cj1673c YP 002345041.1	YKDKK	LGQGR	ENSKAFLKENPEI	ADEITKA	IQNSMG	IEGMISGSEDDE..GEE..... 343		
NTDB id 1214 NCTC11637 00359 SQJ03206.1	YQDKK	LGQGR	ENAKALLKEDKAL	ADEITLK	IKESIG	SNEEIMPLPDEP..LEEM.E..... 347		
NTDB id 1211 C694 RS00795 WP 000963128.1	YQDKK	LGQGR	ENAKALLKEDKAL	ADEITLK	IKESIG	SNEEIMPLPDEP..LEEM.E..... 347		
NTDB id 1389 A4U84 RS07560 WP 021112712.1	YDGT	KIGQG	KNNAVKWLKENPEI	ADKLEQE	IRNTLA	ASNPNSVLKATASDSNDES.DVEEFS.....EEEL..... 372		
NTDB id 1130 NGFG RS03960 WP 003688695.1	YNGAK	IIGQK	DNVRVWLKENPEIS	DEIDAK	IRALNG	VEMHITEGTQDET	DGER.....P.....EE..... 348	
NTDB id 1124 NGFG RS03960 WP 003688695.1	YNGAK	IIGQK	DNVRVWLKENPEIS	DEIDAK	IRALNG	VEMHITEGTQDET	DGER.....P.....EE..... 348	
NTDB id 1123 OK783 RS03845 WP 003688695.1	YNGAK	IIGQK	DNVRVWLKENPEIS	DEIDAK	IRALNG	VEMHITEGTQDET	DGER.....P.....EE..... 348	
NTDB id 1427 RS RS02760 WP 011000510.1	YNGER	RIGQGR	DNCREFLRENAEL	AREIENK	VREHLG	VTPMGAVTLA.EEVEED..... 352		
NTDB id 1165 A1552VC RS01565 WP 000344154.1	YNGD	KIGQG	KANACKYLKENPEI	AKTLDKKL	REMLLN	PENMQLIAETSSAADV.EFGAVP.....EEF..... 354		
NTDB id 1142 GTF74 RS11550 WP 000344154.1	YNGD	KIGQG	KANACKYLKENPEI	AKTLDKKL	REMLLN	PENMQLIAETSSAADV.EFGAVP.....EEF..... 354		
NTDB id 1022 ACIAD RS06390 WP 004925639.1	YQGN	KIGQG	KNNVIRYLEENP	QISTE	IEAV	IREQLLTKASDQTAH.DETEEEP.DLL..E.....S..... 349		
NTDB id 1074 ABD1 RS10195 WP 000344167.1	YQGN	KIGQG	KNNVIRYFEENN	QIAEEIERN	IREQLL	TTGTNGAVQ.I.EDEEEP.DLL..L.....ES..... 349		
NTDB id 1205 PSJM300 05545 AFN77183.1	YKGS	KIGQG	KANAACKYLEENPEI	GQIEEQ	IRAKLL	VTSANTKATPVAEDLADA.DI..... 347		
consensus	!	***!!	*****	**	*****	*****	**	*

logo

		IEEE	
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	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 499 SM12261 RS08315 WP 078228268.1	IEIEE	384	
NTDB id 527 SMSK321 RS11065 WP 001085454.1	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 349038 EYA81 RS03050 WP 117601636.1	.....	345	
NTDB id 1334 RAOC RS04870 WP 004918236.1	.....	343	
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 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			

- non conserved
- similar
- ≥ 50% conserved