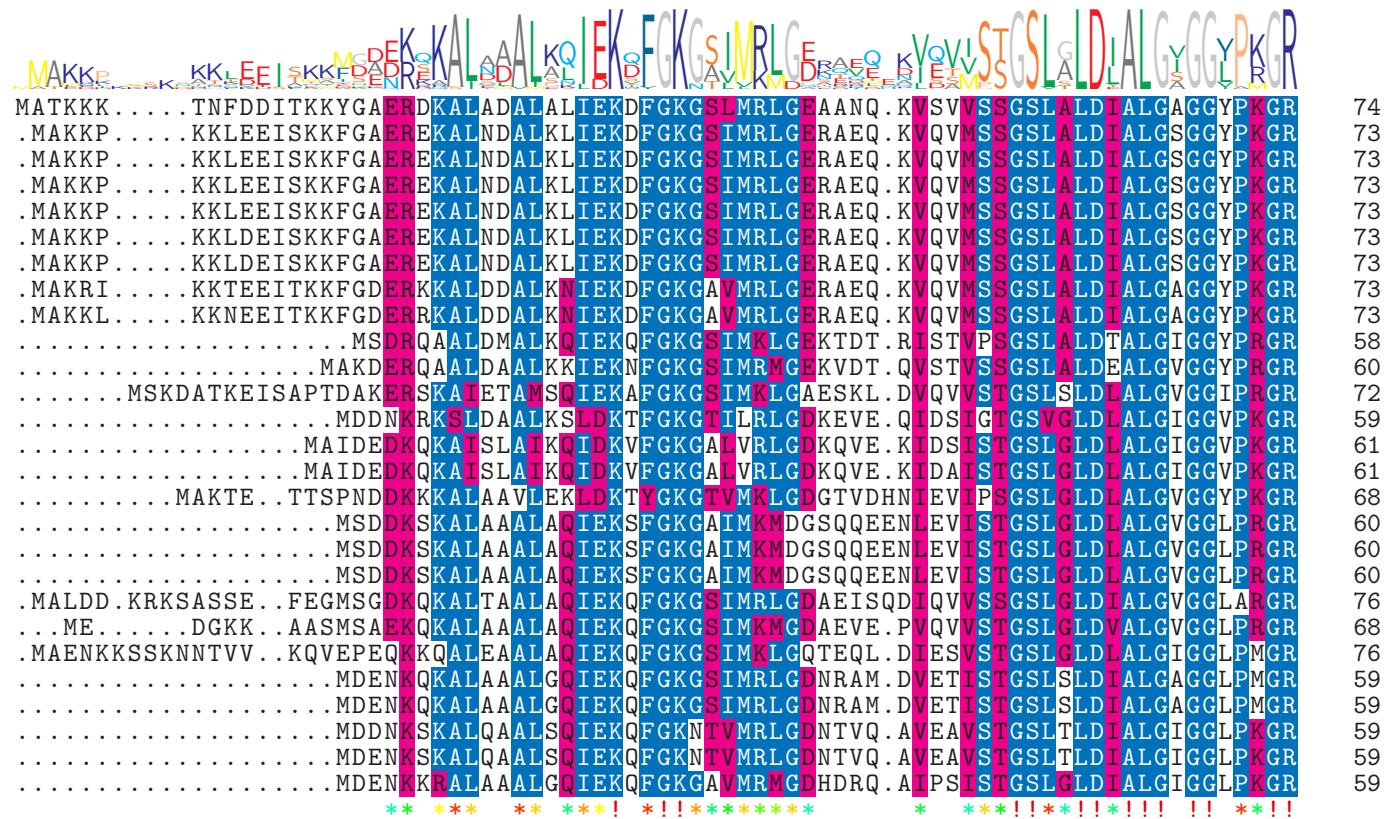


```

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 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 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 176116 A4F89 RS10430 WP 011903669.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
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

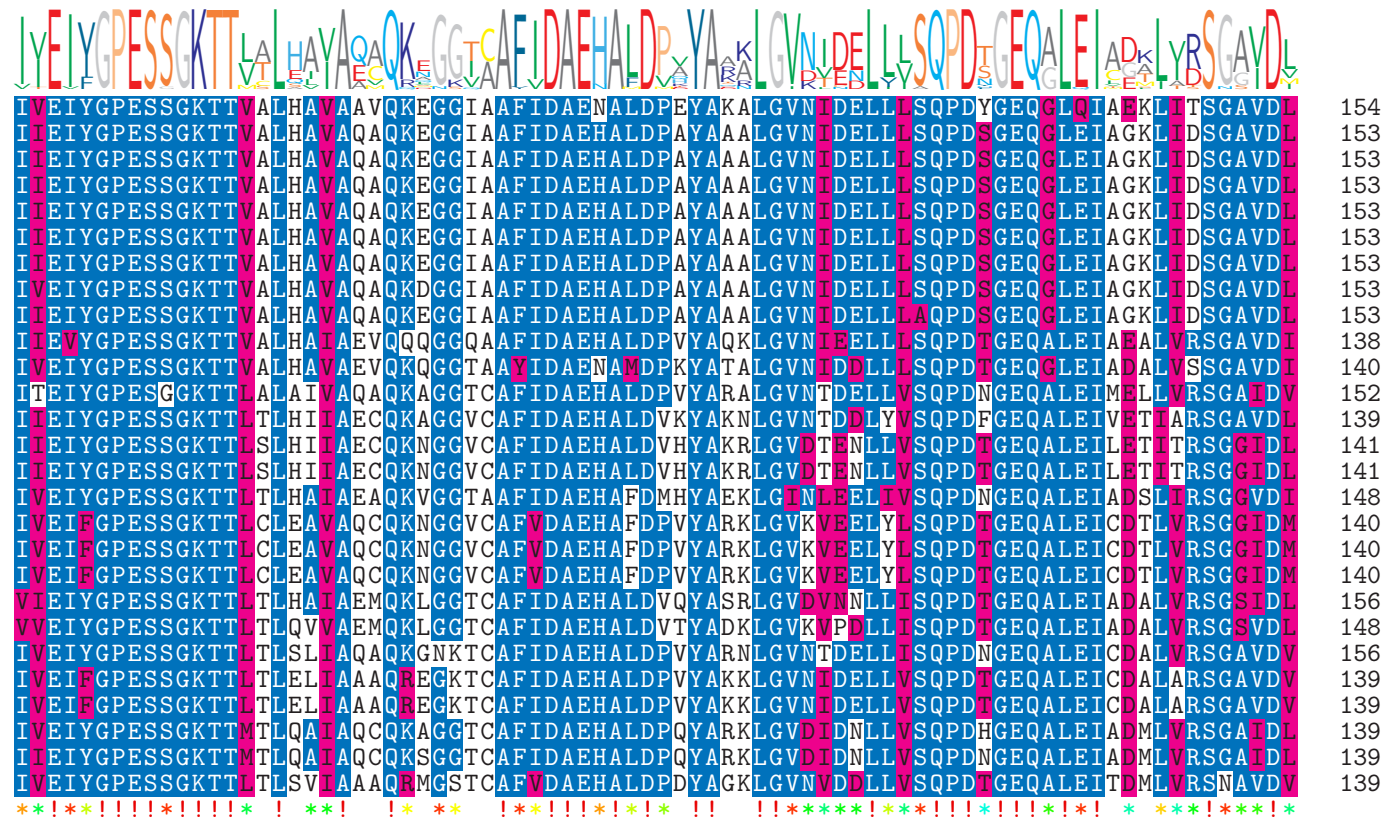
```



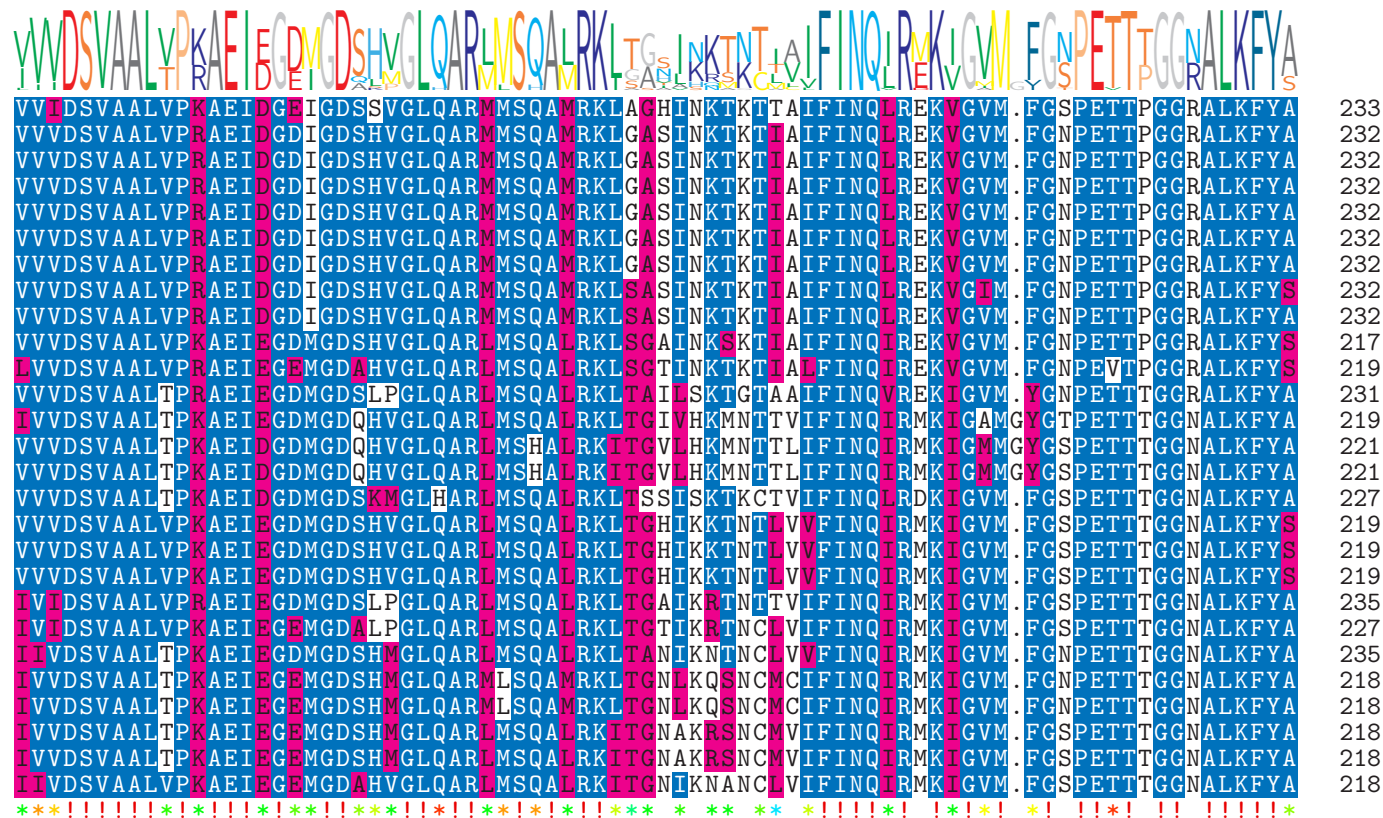
```

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 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 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 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 176116 A4F89 RS10430 WP 011903669.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
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 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 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 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 176116 A4F89 RS10430 WP 011903669.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
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	SVRLDVRGSTKIEEGS.GDNKTQIGK	ITKIKVVKNKVAPPFKVALVDIMFGEGISSTGELINIAVEEGI	TKKSGAWFAYN	312
NTDB id 269 KZH43 RS08665 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFKAEVVEIMYEGEGISKTGELLKIASDLDI	TKKAGAWYSYK	311
NTDB id 228 SPD RS09265 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFKAEVVEIMYEGEGISKTGELLKIASDLDI	TKKAGAWYSYK	311
NTDB id 194 SPR RS08825 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFKAEVVEIMYEGEGISKTGELLKIASDLDI	TKKAGAWYSYK	311
NTDB id 159 SP RS09750 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFKAEVVEIMYEGEGISKTGELLKIASDLDI	TKKAGAWYSYK	311
NTDB id 499 SM12261 RS08315 WP 078228268.1	SVRLDVRGSTQIKGTG.DQKDTN	VGKETKIKVVKNKVAPPFKAEFVEIMYEGEGISKTGELLKIASDLDI	TKKAGAWYSYK	311
NTDB id 527 SMSK321 RS11065 WP 001085454.1	SVRLDVRGSTQIKGTG.DQKDTN	VGKETKIKVVKNKVAPPFKAEFVEIMYEGEGISKTGELLKIASDLDI	TKKAGAWYSYK	311
NTDB id 408 SMU RS09530 WP 002262392.1	SVRLDVRGNTQIKGTG.EQKDSN	IGKETKIKVVKNKVAPPFKAEFVEIITYGEGISRTGELVKIASDLGI	IQKAGAWYSYN	311
NTDB id 453 Spy49 1753c ACI62003.1	SVRLDVRGTTQIKGTG.DQKDS	IGKETKIKVVKNKVAPPFKVAEVEIMYEGEGISRTGELVKIASDLDI	IQKAGAWFSYN	311
NTDB id 115 BSU 16940 NP 389576.2	SVRLEVRRAEQLKQGN.....DV	MGNKTKIKVVKNKVAPPFRTAEVDDIMYEGEGISKEGEIIDLGTELDIV	QKSGSWYSYE	292
NTDB id 625 LCA RS02525 WP 011374196.1	TVRLEVRRAEETIKNGT.....DM	IGNRARIKVVKNKVAPPFKVAEVDIMYGGISRTGELVDMAVEKDI	INKSGSWYSYG	294
NTDB id 1313 DR RS12030 WP 010888966.1	SVRLDVRKIGQ....PTKVGND	AVANTVKIKTVKNKVAAPFKEVELALVYGKGFQDLSDLVGLAADMDI	TKKAGSFYSYG	307
NTDB id 1245 Cj1673c YP 002345041.1	SVRLDVRKVAT....L.KQNEEP	IGNRVKVVKNKVAPPFRQAEFDVMFGEGLSREGELIDYGVKLDIV	DKSGAWFSYK	294
NTDB id 1211 C694 RS00795 WP 000963128.1	SVRIDIRRIAS....L.KQNEQH	IGNRAKAKVVKNKVAPPFRQAEFDIMFGEGISKEGEIIDYGVKLDIV	DKSGAWLSYQ	296
NTDB id 1214 NCTC11637 00359 SQJ03206.1	SVRIDIRRIAA....L.KQNEQH	IGNRAKAKVVKNKVAPPFRQAEFDIMFGEGISKEGEIIDYGVKLDIV	DKSGAWLSYQ	296
NTDB id 1334 RAOC RS04870 WP 004918236.1	SVRIDIRRLSDTGKIKDKSGEV	IGNRTKVVKNKVAPPFKSAEFDIMYEGGVSKVGEILDVATDLDI	IQKSGSWFSYQ	307
NTDB id 1130 NGFG RS03960 WP 003688695.1	SVRLDIRRTGS....I.KKGEV	LGNETRVKVIKNKVAPPFRQAEFDILYEGEGISWEGELIDIGVKNDI	INKSGAWYSYN	294
NTDB id 1124 NGFG RS03960 WP 003688695.1	SVRLDIRRTGS....I.KKGEV	LGNETRVKVIKNKVAPPFRQAEFDILYEGEGISWEGELIDIGVKNDI	INKSGAWYSYN	294
NTDB id 1123 OK783 RS03845 WP 003688695.1	SVRLDIRRTGS....I.KKGEV	LGNETRVKVIKNKVAPPFRQAEFDILYEGEGISWEGELIDIGVKNDI	INKSGAWYSYN	294
NTDB id 176116 A4F89 RS10430 WP 011903669.1	SMRLDIRRIGS....I.KKGEV	VGNETRVKVVKNKVSPPFREAIIDIMYGAGISREGEIIDMGVEADIV	DKSGSWYSYN	310
NTDB id 1427 RS RS02760 WP 011000510.1	SVRLDIRRIGS....I.KKGEV	VGNETKVVKNKVAPPFRQAEFDILYAGVVSREGEIIDLGVEAKVVEKSGAWYSYN	302	
NTDB id 1389 A4U84 RS07560 WP 021112712.1	SVRLDIRRCGV....V.KGDDEI	IGSETKVVKNKVAPPFRQAEFDIMYEGEGISRMNELLILAEANGFI	KKSGAWFSYD	310
NTDB id 1165 A1552VC RS01565 WP 000344154.1	SVRLDIRRTGA....I.KEGEEV	VGNETRIKVVKNKIAAPFKEANTQIMYGGGFNREGELIDLGVKHKMVEKSGAWYSYN	293	
NTDB id 1142 GTF74 RS11550 WP 000344154.1	SVRLDIRRTGA....I.KEGEEV	VGNETRIKVVKNKIAAPFKEANTQIMYGGGFNREGELIDLGVKHKMVEKSGAWYSYN	293	
NTDB id 1022 ACIAD RS06390 WP 004925639.1	SVRLDIRRIGQ....V.KEGDEI	IGSETKVVKNKMAPPFRQAEFIQILYGKGVNQLGELVDLAVQQNIV	QKAGAWYSYQ	293
NTDB id 1074 ABD1 RS10195 WP 000344167.1	SVRLDIRRIGQ....V.KEGDEI	VGSETKVVKNKMAPPFKAEIFQILYGKGTNQLGELVDLAVQQDIV	QKAGAWYSYQ	293
NTDB id 1205 PSJM300 05545 AFN77183.1	SVRLDIRRTGA....V.KEGDEV	VGSETRVKVVKNKVAPPFRQAEFIQILYGKGIYRNGEIIDLGVQQGLVEKSGAWAYK	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 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 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 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 176116 A4F89 RS10430 WP 011903669.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
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

G K I G Q G K E N A K Y L K E N P E I A D E I D K I R E S T G L P R E V E T T E K P E E E R K K E E A V E E V L D L G D E I E

DEKIGQGAEKAKNYLKEHQDVFEIDHKVRAAHGLDDSEVAETEEETTA . SKTKAKAKKEEKAVETEEIELELED . . .	387
DEKIGQGSENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKK . DE . . . PKKEEA . . VNEEVPLDLGDELEI	384
DEKIGQGSNAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKK . DE . . . PKKEEA . . VNEEVPLDLGDELEI	384
DEKIGQGSNAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKK . DE . . . PKKEEA . . VNEEVPLDLGDELEI	384
DEKIGQGSNAKKYLAHNPFIFFDEIDHQRVVFGLIDGEEIAES . . . KK . DE . . . AAQVDS . . VNEEVPLDLGDELEI	380
DEKIGQGSNAKKYLADNPVEFAEIDHQRVVFGLIDGEAAAS . . . KK . DE . . . VAQVDS . . VNEEVPLDLGDELEI	380
GEKIGQGSNAKKFLADNPFIFFDIDHKVRVQGLIEDNTEEEKSSSEK ETDEK . . ADKNLVLELDSTIEL	381
GEKIGQGSNAKRYLADHPQLFDEIDRKVRVKFGLLEESEESAMAVASE E TDDLALDLNGIEI	376
EERLGQGRENAQQFLKENKDIMLMIQEQIREHYGLDNNGVVQQAEETQE . EL . EFE . E	348
SERIGQGRENAKNYLADHEDVEDEVRLKVRAAYGISDVPEEDLPPTTEDE . QI . NILPDDST EE .	355
DERRIGQGEKTIATYIAERPMEQEIHDRVMMAAIRAGNAGEAPALAPAPAAPAAAAA .	363
DKKLGGGRENSKAFLKENPEIADEITKAIQNSMGIEMISG . SEDDEGEE .	343
DKKLGGGRENAKALLKEDKALADEITLKIKESIGSNEEIMP . LPDEPLEEME	347
DKKLGGGRENAKALLKEDKALADEITLKIKESIGSNEEIMP . LPDEPLEEME	347
DTKLGGGRDVTVELIKDNPELAEELEAKIREKLQAK	343
GAKIGQGDNDNRVLKENPEISDEIDAKIRALNGVEMHITE . GTQDETGERPEE	348
GAKIGQGDNDNRVLKENPEISDEIDAKIRALNGVEMHITE . GTQDETGERPEE	348
GAKIGQGDNDNRVLKENPEISDEIDAKIRALNGVEMHITE . GTQDETGERPEE	348
GDRIGQGDNDNRREFLENPAIAKDIKAKIREKLGVKSGSAV . VTDVLSEEEEEVE	363
GERIGQGRDNCREFLRENAELAREIENKVRHLGVTPMGAV . TLAEVEED	352
GKIGQGKNNAVVKLKENPEIADKLEQEIINTLASNPNSVL . KATADSNDSDVE EFSEEEL .	372
GDKIGQGGKANACKYLKENPEIAKTLDKKLREMLLNPNMQML . IAETSSAADVFEFG AVPEEF .	354
GDKIGQGGKANACKYLKENPEIAKTLDKKLREMLLNPNMQML . IAETSSAADVFEFG AVPEEF .	354
GNKIGQGKNNVIRYLEENPQISTEIEAVIREQLLTASKDQT . AA . HDETEEPDLL ES .	349
GNKIGQGKNNVIRYFEENNQIAEIERNIREQLLTTGTNGA . VQ . I . EDEEPDLL LES .	349
GSKIGQGGKANACKYLENPEIQEIEQQIRAKLLVTSANTK . ATPVAEDLADADI	347

!!** ** ***** ** ** *

logo

NTDB id 600 KW2 RS01765 WP 011675413.1	....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	EIEE	388
NTDB id 228 SPD RS09265 WP 001085462.1	EIEE	388
NTDB id 194 SPR RS08825 WP 001085462.1	EIEE	388
NTDB id 159 SP RS09750 WP 001085462.1	EIEE	388
NTDB id 499 SM12261 RS08315 WP 078228268.1	EIEE	384
NTDB id 527 SMSK321 RS11065 WP 001085454.1	EIEE	384
NTDB id 408 SMU RS09530 WP 002262392.1	ED..	383
NTDB id 453 Spy49 1753c ACI62003.1	ED..	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 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 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 176116 A4F89 RS10430 WP 011903669.1	....	363
NTDB id 1427 RS RS02760 WP 011000510.1	....	352
NTDB id 1389 A4U84 RS07560 WP 021112712.1	....	372
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