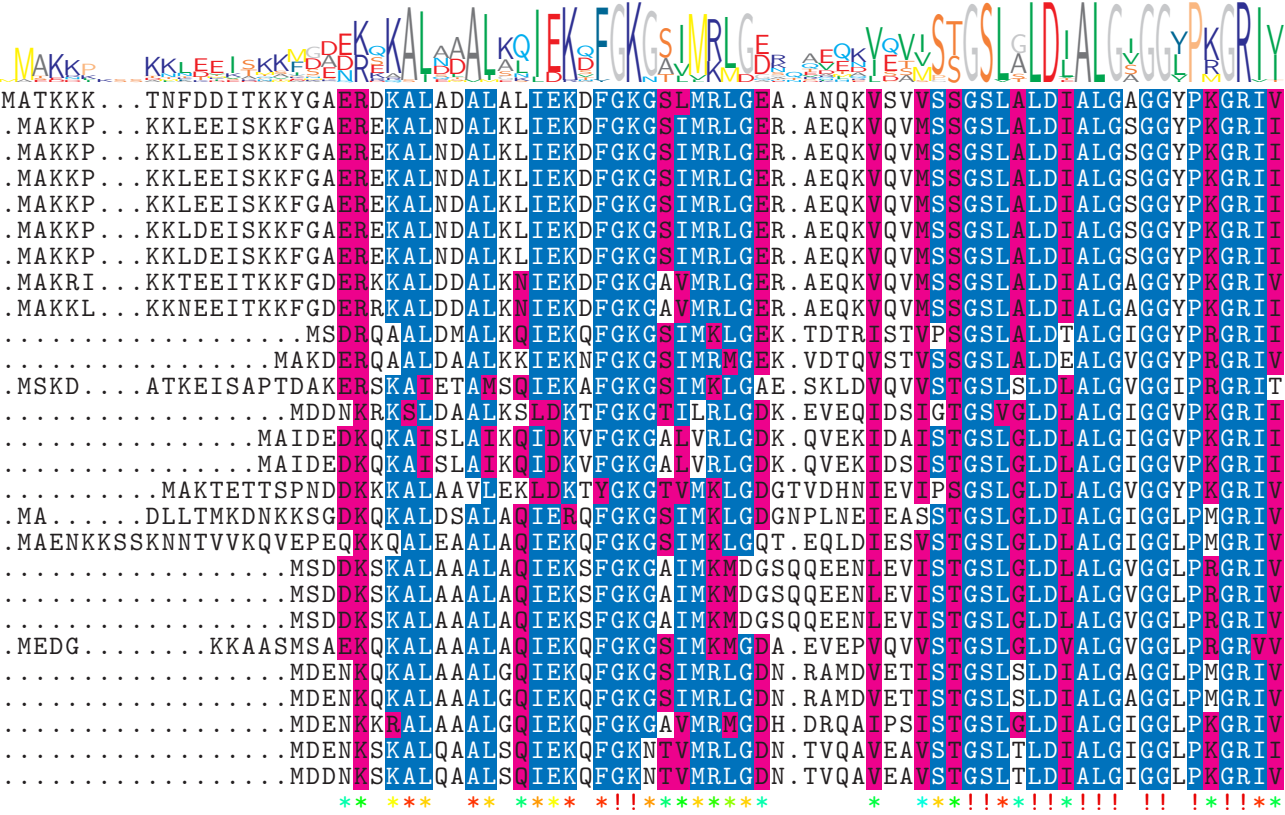


logo

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 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
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 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 139536 PhaeoP54 RS07425 WP 014874638.1
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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
consensus

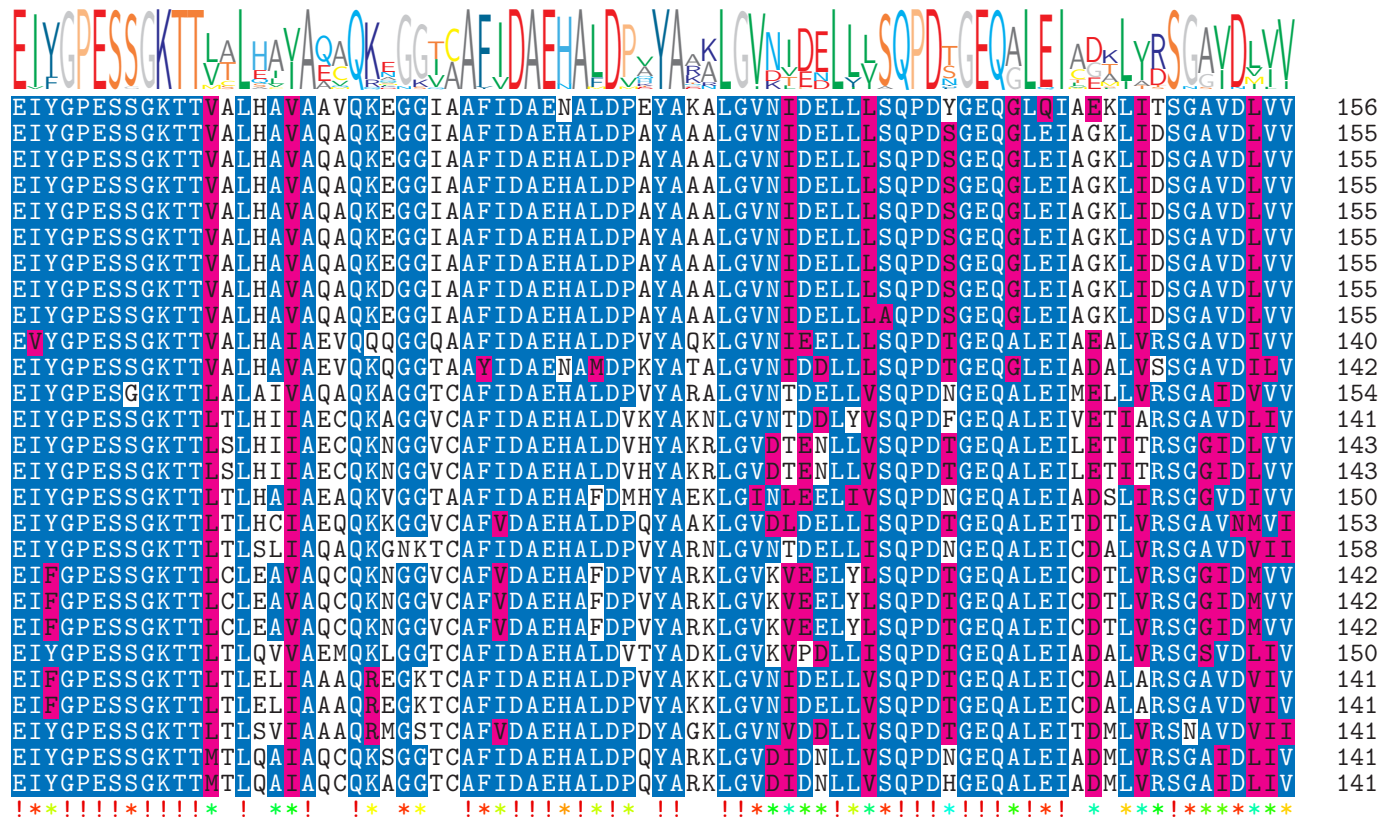


76
75
75
75
75
75
75
75
75
75
60
62
74
61
63
63
70
73
78
62
62
62
70
61
61
61
61
61

```

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 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 115 BSU 16940 WP 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 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 139536 PhaeoP54 RS07425 WP 014874638.1
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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
consensus

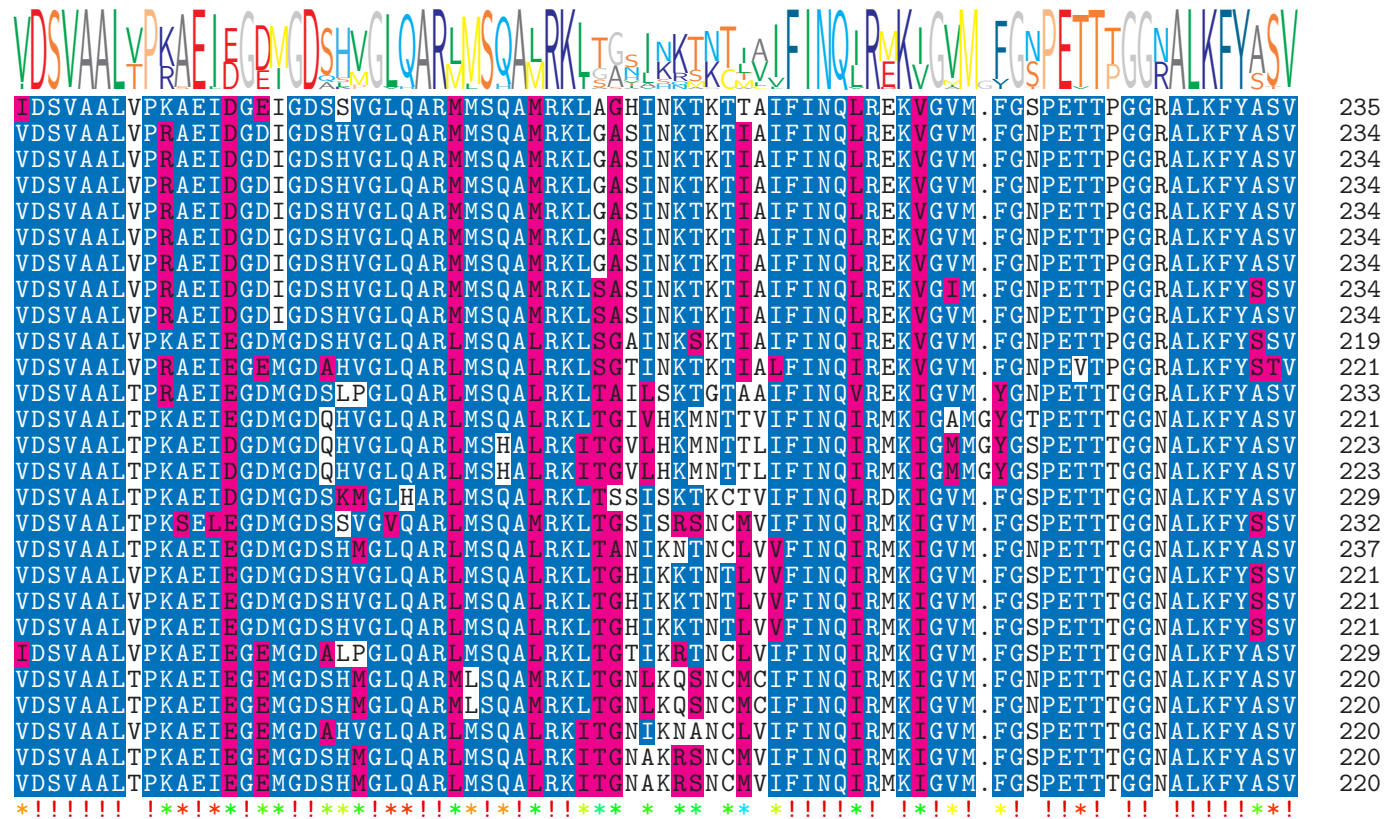
```



```

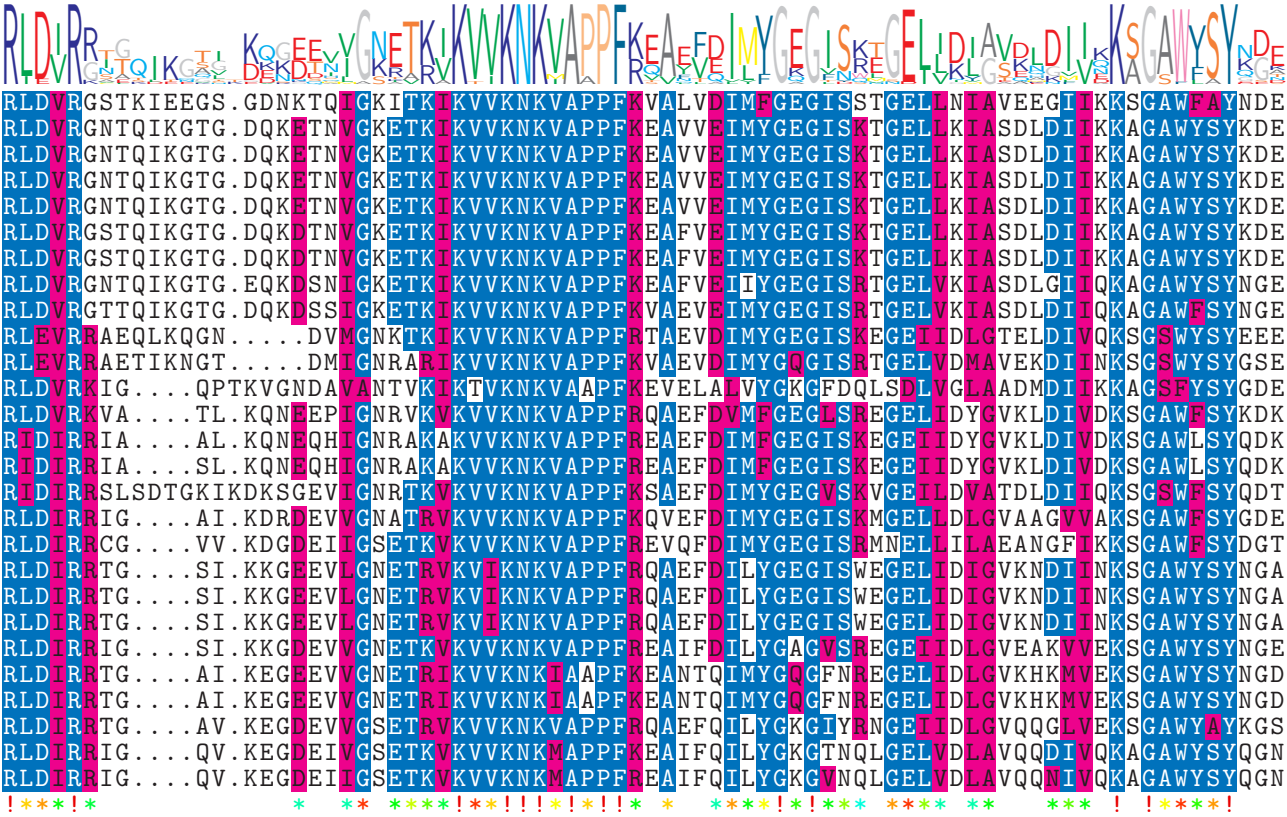
NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 115 BSU 16940 WP 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 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 139536 PhaeoP54 RS07425 WP 014874638.1
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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
consensus

```



logo

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 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
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 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 139536 PhaeoP54 RS07425 WP 014874638.1
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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
consensus



314
313
313
313
313
313
313
313
313
313
294
296
309
296
298
298
309
307
312
296
296
296
304
295
295
295
295
295

logo

NTDB id 600 KW2 RS01765 WP 011675413.1	KIGQGA	ENAKNYLKEHQDVFEIDHKVRAAHG	LLDDSEVAETEEETTAS	TKAKAKKEEKAVETEE	IELELED.....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	KIGQGS	ENAKKYLAEHPEIFDEIDKQVRSKFGL	IDGEEVSEQDTENKKDE...	PKKEEA..VNEEVPLDLG	DELEIEIE	387
NTDB id 228 SPD RS09265 WP 001085462.1	KIGQGS	ENAKKYLAEHPEIFDEIDKQVRSKFGL	IDGEEVSEQDTENKKDE...	PKKEEA..VNEEVPLDLG	DELEIEIE	387
NTDB id 194 SPR RS08825 WP 001085462.1	KIGQGS	ENAKKYLAEHPEIFDEIDKQVRSKFGL	IDGEEVSEQDTENKKDE...	PKKEEA..VNEEVPLDLG	DELEIEIE	387
NTDB id 159 SP RS09750 WP 001085462.1	KIGQGS	ENAKKYLAEHPEIFDEIDKQVRSKFGL	IDGEEVSEQDTENKKDE...	PKKEEA..VNEEVPLDLG	DELEIEIE	387
NTDB id 527 SMSK321 RS11065 WP 001085454.1	KIGQGS	ENAKKYLAADNPEVFAEIDHQVVRVQFGL	IDGEEAAE...SKKDE...	VAQVDS..VNEEVTLDLG	DELEIEIE	383
NTDB id 499 SM12261 RS08315 WP 078228268.1	KIGQGS	ENAKKYLAADNPEIFDEIDHQVVRVQFGL	IDGEEIAE...SKKDE...	AAQVDS..VNEEVTLDLG	DELEIEIE	383
NTDB id 408 SMU RS09530 WP 002262392.1	KIGQGS	ENAKKFLADNPEIFDDIDHKVVRVQYGL	IEEDNTEEKQSSKEK.....	ETDEK..ADKNLVLELDD	TIELED.	383
NTDB id 453 Spy49 1753c ACI62003.1	KIGQGS	ENAKRYLADHPQIFDEIDRKVRVKFGL	LEESEEEESAMAVASE.....	E.....TDDLALDL	DNGIEIED.	378
NTDB id 115 BSU 16940 NP 389576.2	RLGQGR	ENAKQFLKENKDIMLMIQEQUIREHYGL	DNNGVVQQQAEETQEEL	EFE.E.....		348
NTDB id 625 LCA RS02525 WP 011374196.1	RIGQGR	ENAKNYLADHEDVEDEVRLKVRRAAYG	ISDVPEEDLPTTEDE.QI	NILPDDST....EE.....		355
NTDB id 1313 DR RS12030 WP 010888966.1	RIGQCK	EKTIAITAEPEMEQEIRDRVMAAIRAGN	AGEAPALAPAPAAPE....	AAEA.....		363
NTDB id 1245 Cj1673c YP 002345041.1	KLGGGR	ENSKAFLKENPEIADEITKATQNSMG	TEGMISG..SEDDEGEE.....			343
NTDB id 1214 NCTC11637 00359 SQJ03206.1	KLGGGR	ENAKALLKEDKALADEITLKIKESIGS	NEEIMP..LPDEPLEEM....	E.....		347
NTDB id 1211 C694 RS00795 WP 000963128.1	KLGGGR	ENAKALLKEDKALADEITLKIKESIGS	NEEIMP..LPDEPLEEM....	E.....		347
NTDB id 1334 RAOC RS04870 WP 004918236.1	KLGGGR	DTVVKELTKDNPELAEELEAKIREKLQAK				343
NTDB id 139536 PhaeoP54 RS07425 WP 014874638.1	RIGQGR	ENAKTYLRENAHIAVDIEDKIRAACH	IEFDRPE..GADDDILEA.....			355
NTDB id 1389 A4U84 RS07560 WP 021112712.1	KIGQCK	NNAVKWLKENPEIADKLEQEIRNTLAS	NPNSVL..KATASDSND....	ESDVVEEFSEEL.....		372
NTDB id 1130 NGFG RS03960 WP 003688695.1	KIGQCK	DNVRVWLKENPEISDEIDAKIRALNCV	EMHITE..GTQDET.....	DGERPEE.....		348
NTDB id 1124 NGFG RS03960 WP 003688695.1	KIGQCK	DNVRVWLKENPEISDEIDAKIRALNCV	EMHITE..GTQDET.....	DGERPEE.....		348
NTDB id 1123 OK783 RS03845 WP 003688695.1	KIGQCK	DNVRVWLKENPEISDEIDAKIRALNCV	EMHITE..GTQDET.....	DGERPEE.....		348
NTDB id 1427 RS RS02760 WP 011000510.1	RIGQGR	DNCREFLRENAREIENKVRREHLGV	TPMGAV..TLA.EEVEE....	D.....		352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	KIGQCK	ANACKYLLKENPEIAKTLDKKLREMLLN	PENMQL..IAETSSAAD....	DVEFGAVPEEF.....		354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	KIGQCK	ANACKYLLKENPEIAKTLDKKLREMLLN	PENMQL..IAETSSAAD....	DVEFGAVPEEF.....		354
NTDB id 1205 PSJM300 05545 AFN77183.1	KIGQCK	ANAAYLLENPEIGQEIEQQIRAKLLV	TSANTK..ATPVAEDLA....	DAD..I.....		347
NTDB id 1074 ABD1 RS10195 WP 000344167.1	KIGQCK	NNVIRYFEENNQIAEEIERNIREQLLT	TGTNGA..VQ.I.EDEE....	EPD..LLLES.....		349
NTDB id 1022 ACIAD RS06390 WP 004925639.1	KIGQCK	NNVIRYLEENPQISTEIEAVIREQLLT	KASDQT..AA.HDETEE....	EPD..LLES.....		349
consensus	***!!!	*****	*****	*****	*****	

logo

NTDB id 600 KW2 RS01765 WP 011675413.1	E	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 527 SMSK321 RS11065 WP 001085454.1	E	384
NTDB id 499 SM12261 RS08315 WP 078228268.1	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 1313 DR RS12030 WP 010888966.1	.	363
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 139536 PhaeoP54 RS07425 WP 014874638.1	.	355
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 1074 ABD1 RS10195 WP 000344167.1	.	349
NTDB id 1022 ACIAD RS06390 WP 004925639.1	.	349
consensus		

-  non conserved
-  similar
-  ≥ 50% conserved