

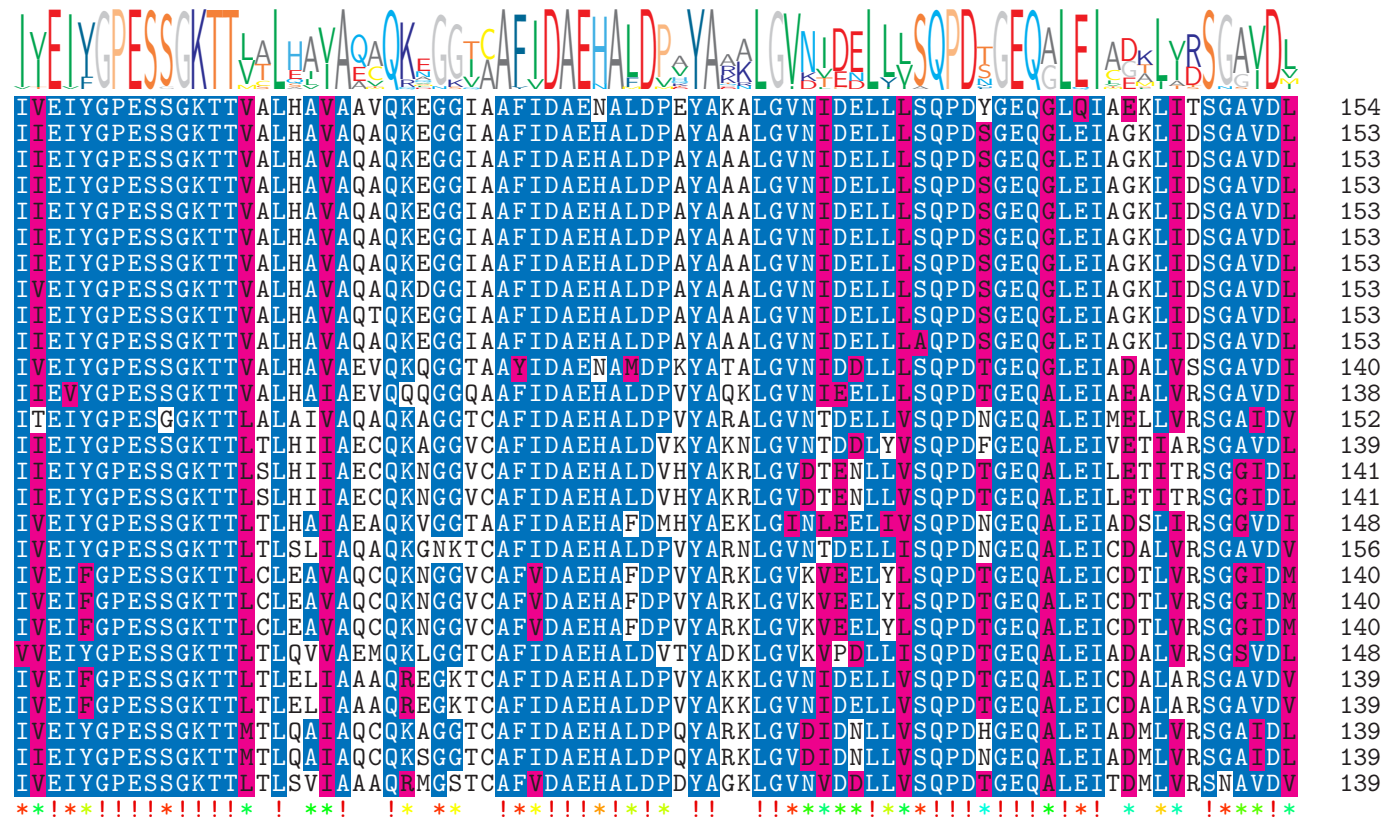
logo

NTDB id 600 KW2 RS01765 WP 011675413.1	MATKK.....KTNFDDITKKYGAERDKALADALALIEKD FGKGSIMRLGEA.ANQKVS	74
NTDB id 269 KZH43 RS08665 WP 001085462.1	.MAKK.....PKKLEEISKKFGAEREKALNDALKLIEKD FGKGSIMRLGER.AEQKVQVMSSGSLALD	73
NTDB id 228 SPD RS09265 WP 001085462.1	.MAKK.....PKKLEEISKKFGAEREKALNDALKLIEKD FGKGSIMRLGER.AEQKVQVMSSGSLALD	73
NTDB id 194 SPR RS08825 WP 001085462.1	.MAKK.....PKKLEEISKKFGAEREKALNDALKLIEKD FGKGSIMRLGER.AEQKVQVMSSGSLALD	73
NTDB id 159 SP RS09750 WP 001085462.1	.MAKK.....PKKLEEISKKFGAEREKALNDALKLIEKD FGKGSIMRLGER.AEQKVQVMSSGSLALD	73
NTDB id 527 SMSK321 RS11065 WP 001085454.1	.MAKK.....PKKLDEISKKFGAEREKALNDALKLIEKD FGKGSIMRLGER.AEQKVQVMSSGSLALD	73
NTDB id 499 SM12261 RS08315 WP 078228268.1	.MAKK.....PKKLDEISKKFGAEREKALNDALKLIEKD FGKGSIMRLGER.AEQKVQVMSSGSLALD	73
NTDB id 408 SMU RS09530 WP 002262392.1	.MAKR.....IKKTEEITKKFGDERKKALDDALKNIEKD FGKGAVMRLGER.AEQKVQVMSSGSLALD	73
NTDB id 346 STU RS09850 WP 002949056.1	.MAKK.....TKKTEEITKKFGDERRKALDDALKNIEKD FGKGAVMRLGER.AEQKVQVMSSGSLALD	73
NTDB id 453 Spy49 1753c ACI62003.1	.MAKK.....LKKNEEITKKFGDERRKALDDALKNIEKD FGKGAVMRLGER.AEQKVQVMSSGSLALD	73
NTDB id 625 LCA RS02525 WP 011374196.1	MAKDERQAALDAALKKIEKNFGKGSIMRMGEK.VDTQVSTVSSGSLALDEALGVGGYP	60
NTDB id 115 BSU 16940 NP 389576.2	MSDRQAALDMALKQIEKQFGKGSIMKLG EK.TDTRISTVPSGSLALDTALGIGGYP	58
NTDB id 1313 DR RS12030 WP 010888966.1	MSKDATKEISAPTDAKERSKATETAMSQIEKAFGKGSIMKLGAE.SKLDVQVVSTGSLSLD	72
NTDB id 1245 Cj1673c YP 002345041.1	MDNKRKSLDAALKSLDKTFGKGTILRLGDK.EVEQIDSIGTGSVGLDLALGIGGV	59
NTDB id 1211 C694 RS00795 WP 000963128.1	MAIDEDKQKATISLAIKQIDKVFVGKGA LVRLGDK.QVEKIDSISTGSLGLDLALGIGGV	61
NTDB id 1214 NCTC11637 00359 SQJ03206.1	MAIDEDKQKATISLAIKQIDKVFVGKGA LVRLGDK.QVEKIDAISTGSLGLDLALGIGGV	61
NTDB id 1334 RAOC RS04870 WP 004918236.1	MAKT..ETTSNDDKKKALAAVLEKLDKTYGKGTVMKLG DGTVDHNIIEVIPSGSLGLDLALGV	68
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.MAENKKSSKNNTV..VKQVEPEQKKQALEAALAQIEKQFGKGSIMKLGQT.EQLDIESVSTGSLGLD	76
NTDB id 1130 NGFG RS03960 WP 003688695.1	MSDDKSKALAAALAQIEKSFGKGAIMKMDGSQQUEENLEVISTGSLGLDLALGVGGL	60
NTDB id 1124 NGFG RS03960 WP 003688695.1	MSDDKSKALAAALAQIEKSFGKGAIMKMDGSQQUEENLEVISTGSLGLDLALGVGGL	60
NTDB id 1123 OK783 RS03845 WP 003688695.1	MSDDKSKALAAALAQIEKSFGKGAIMKMDGSQQUEENLEVISTGSLGLDLALGVGGL	60
NTDB id 1427 RS RS02760 WP 011000510.1	.MEDG.....K..KAASMSAEKQKALAAALAQIEKQFGKGSIMKMGDA.EVEPVQVVSTGSLGLD	68
NTDB id 1165 A1552VC RS01565 WP 000344154.1	MDENKQKALAAALGQIEKQFGKGSIMRLGDN.RAMDVETISTGSLSLDIALGAGGL	59
NTDB id 1142 GTF74 RS11550 WP 000344154.1	MDENKQKALAAALGQIEKQFGKGSIMRLGDN.RAMDVETISTGSLSLDIALGAGGL	59
NTDB id 1022 ACIAD RS06390 WP 004925639.1	MDDNKSKALQAALSQIEKQFGKNTVMRLGDN.TVQAVEAVSTGSLTLDIALGIGGL	59
NTDB id 1074 ABD1 RS10195 WP 000344167.1	MDENKSKALQAALSQIEKQFGKNTVMRLGDN.TVQAVEAVSTGSLTLDIALGIGGL	59
NTDB id 1205 PSJM300 05545 AFN77183.1	MDENKKRALAAALGQIEKQFGKGAVMRMGDH.DRQAIPSI	59
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 346 STU RS09850 WP 002949056.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 115 BSU 16940 NP 389576.2
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 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

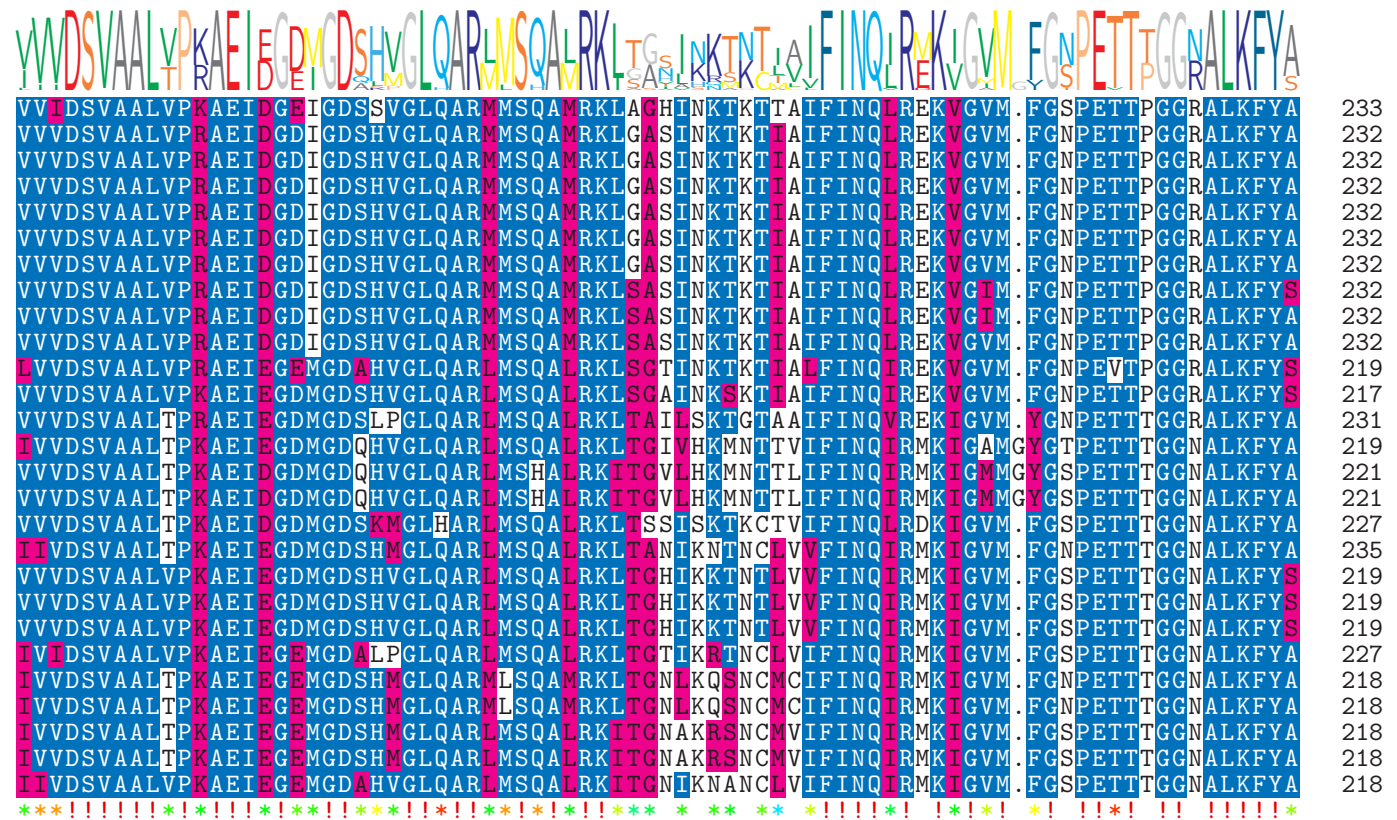
```



```

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 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 346 STU RS09850 WP 002949056.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 115 BSU 16940 NP 389576.2
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 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

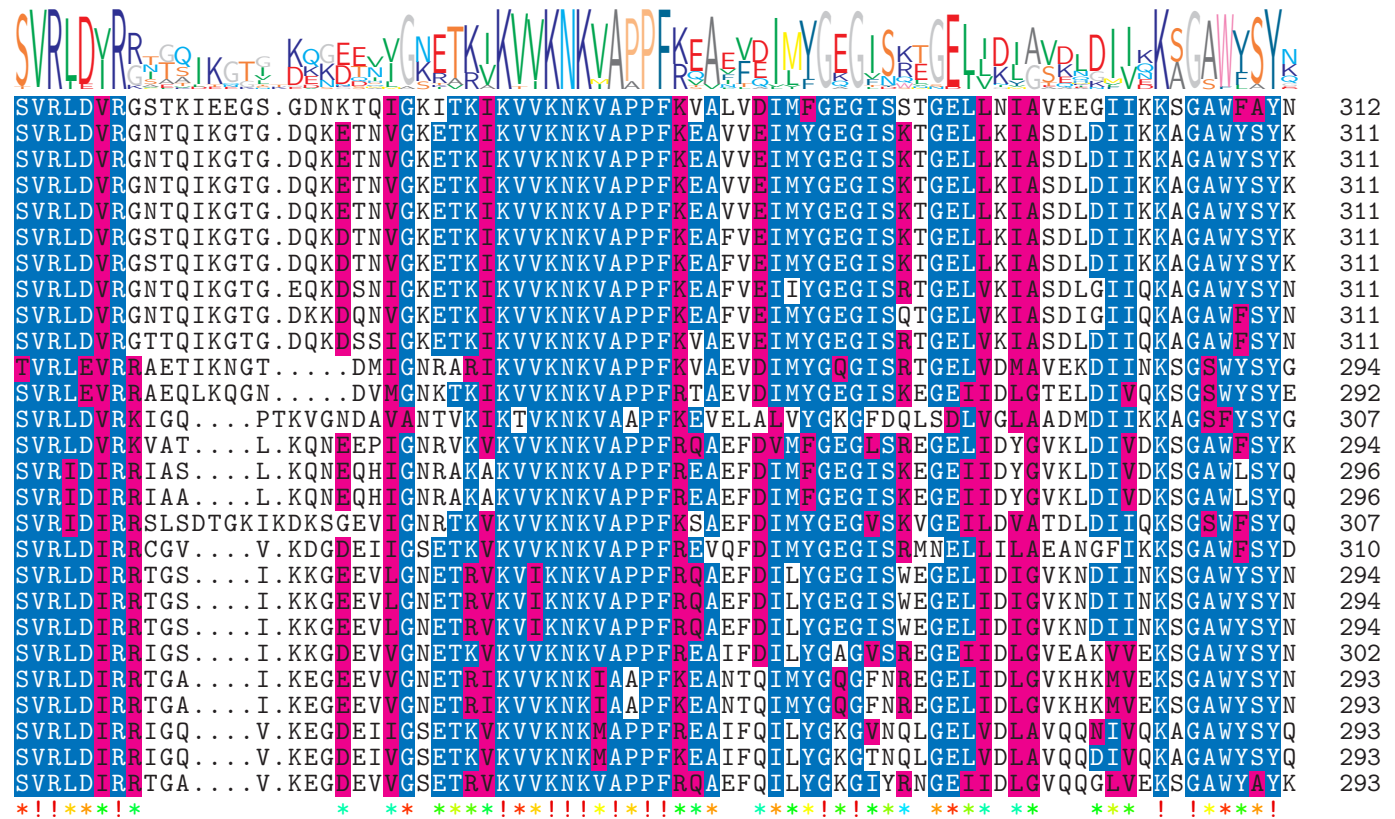
```



```

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 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 346 STU RS09850 WP 002949056.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 115 BSU 16940 NP 389576.2
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 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 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 346 STU RS09850 WP 002949056.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 625 LCA RS02525 WP 0011374196.1
NTDB id 115 BSU 16940 NP 389576.2
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 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 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1205 PSJM300 Q5545 AFN77183.1

```

Sequence	Score
DEKIGGGAETAKAKNYLKEHQDVFEIDHKKVRAAHGLDDSEVAETEEETTASKTAKAKKEEKAVETEEIELELED....	387
DEKIGGGSSENAKKYLAEHPEIFDEIDKQVRSKFLIDGEEVSEQDTENKKDEPKK...EE..AVNEEVPLDLGDELEIE	385
DEKIGGGSSENAKKYLAEHPEIFDEIDKQVRSKFLIDGEEVSEQDTENKKDEPKK...EE..AVNEEVPLDLGDELEIE	385
DEKIGGGSSENAKKYLAEHPEIFDEIDKQVRSKFLIDGEEVSEQDTENKKDEPKK...EE..AVNEEVPLDLGDELEIE	385
DEKIGGGSSENAKKYLAEHPEIFDEIDKQVRSKFLIDGEEVSEQDTENKKDEPKK...EE..AVNEEVPLDLGDELEIE	385
DEKIGGGSSENAKKYLAADNPEVFAEIDHQRVVFGLIDGEEAAE...SKKDVAQ...VD..SVNEEVTLDLGDLEIE	381
DEKIGGGSSENAKKYLAADNPEIFDEIDHQRVVFGLIDGEEAAE...SKKDEAAQ...VD..SVNEEVTLDLGDLEIE	381
GEKIGGGSSENAKKFLADNPEIFDDIDHKKVRVYGLIEEDNTEEKQSSKEKE...T...DE..KADKNLVLELDDTIELE	382
GEKIGGGSSENAKKYLADHPEIFAEDHKKVRVHYGLVELDEDDVVEDTQVEDT..Q...VE..DTSDLELILDLDSTIEIE	383
GEKIGGGSSENAKRYLADHPQLFDEIDRKVRVKFGLLEESEESAMAV.....AS..EETDDLALDLNGIEIE	377
SERIGGQRENAKNYLADHEDVEDEVRLKVRAAAGISDVPEEDLPTTEDE.QINI.....LPDDSTEE..	355
EEERLGGRENAKQFLKENDKIMLTIQEIQIREHYGLDNNGVVQQQAETQEELEF.....E.E.....	348
DERIGGQKEKTIAYIAIERPEMEQEIRDRVMAAIRAGNAGEAPALAPAPAAPEAA...EA.....	363
DKKLGGGRENKAFLENPEIADAITKAIQNSMGTIEGMI.....SGSEDD..EG.....EE.....	343
DKKLGGGRENKALLKEDKALADEITLKIKESIGSNEEI....MPLPDE..PL.....EEME	347
DKKLGGGRENKALLKEDKALADEITLKIKESIGSNEEI....MPLPDE..PL.....EEME	347
DTKLGGGRDITVKELIKDNPPELAEELEAKIREKLQAK.....	343
GTKIGGQKNNNAVKWLKENPEIADKLEQEIRNTLASNPNS.....VLKATASDSN.....DESDVEEFSEEEL...	372
GAKIGGQKDNVRVWLKENPEISDEIDAKIRALNGVEMHI....TEGTQDETGD.....ER.....PEE.....	348
GAKIGGQKDNVRVWLKENPEISDEIDAKIRALNGVEMHI....TEGTQDETGD.....ER.....PEE.....	348
GAKIGGQKDNVRVWLKENPEISDEIDAKIRALNGVEMHI....TEGTQDETGD.....ER.....PEE.....	348
GERIGGGRDNCREFLRENAELARENKVRHGLVTPMG.....AVTLA.EEVE.....ED.....	352
GDKIGGQKANACKYLKENPEIAKTLDKKLREMLLNPNEM....QLIAETSSAA.....DDVEFGAVPEEF....	354
GDKIGGQKANACKYLKENPEIAKTLDKKLREMLLNPNEM....QLIAETSSAA.....DDVEFGAVPEEF....	354
GNKIGGQKNNVIRYLEENPQISTEIEAVIREQLLTKASD....QTAA.HDETE.....EEDPLL..ES.....	349
GNKIGGQKNNVIRYFEENNQIAEIERNIREQLLTTGTN....GAVQ..I..EDE.....EEDPLL..LES.....	349
GSKIGGQKANAAKYLEENPEIQEIEQQIRAKLLVTSAN.....TKATPVAEDL.....ADADI.....	347

logo

		↓EE	
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 527	SMSK321 RS11065 WP 001085454.1	IEE	384
NTDB id 499	SM12261 RS08315 WP 078228268.1	IEE	384
NTDB id 408	SMU RS09530 WP 002262392.1	D..	383
NTDB id 346	STU RS09850 WP 002949056.1	E..	384
NTDB id 453	Spy49 1753c ACI62003.1	D..	378
NTDB id 625	LCA RS02525 WP 011374196.1	...	355
NTDB id 115	BSU 16940 NP 389576.2	...	348
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 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