

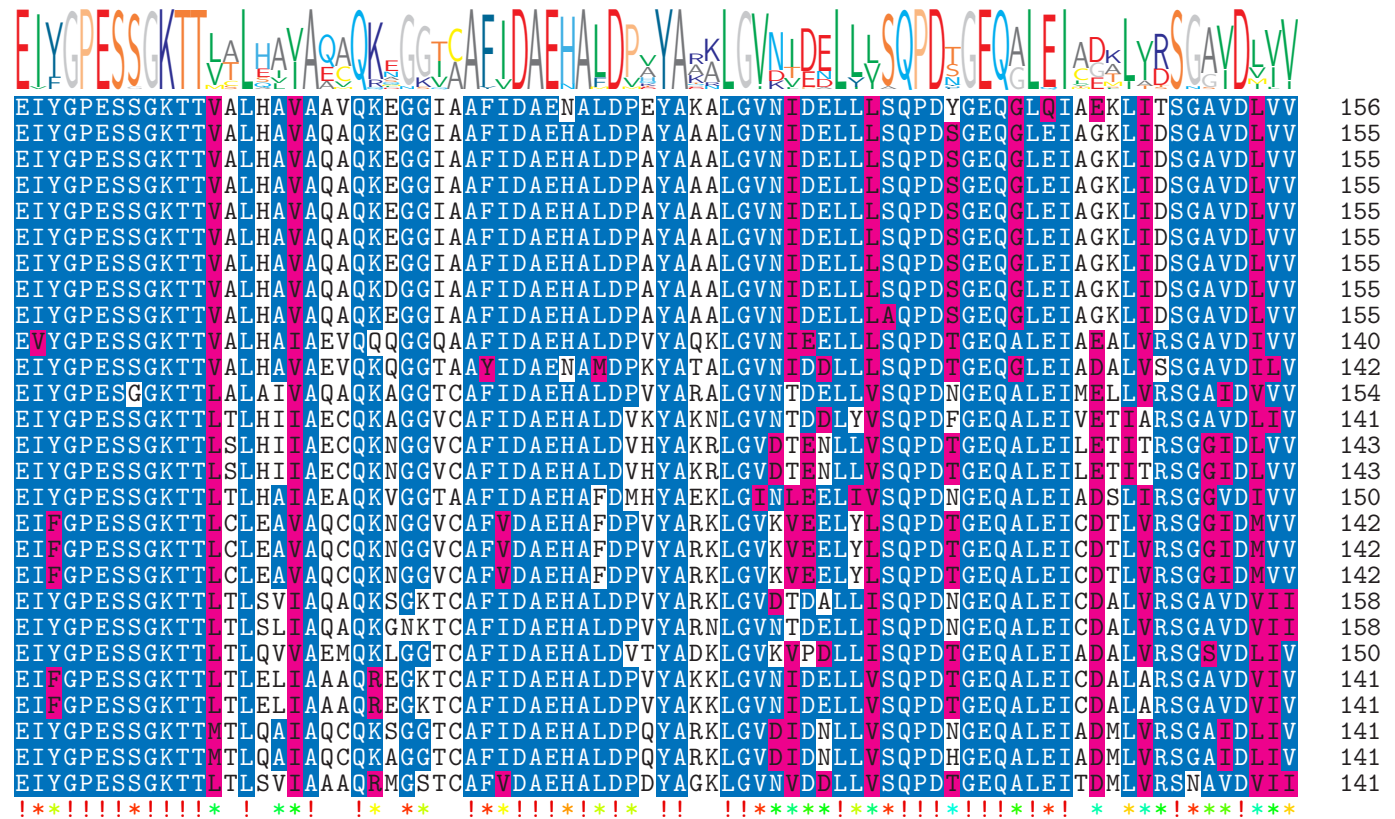
logo

NTDB id 600 KW2 RS01765 WP 011675413.1	MATKKK...TNFDDITKKYGAERDKALADALALIEKD FGKGSIMRLGEA.ANQKVSVVSSGSLALDIALGAGGYPKGRIV	76
NTDB id 269 KZH43 RS08665 WP 001085462.1	.MAKKP...KKLEEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRIT	75
NTDB id 228 SPD RS09265 WP 001085462.1	.MAKKP...KKLEEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRIT	75
NTDB id 194 SPR RS08825 WP 001085462.1	.MAKKP...KKLEEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRIT	75
NTDB id 159 SP RS09750 WP 001085462.1	.MAKKP...KKLEEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRIT	75
NTDB id 527 SMSK321 RS11065 WP 001085454.1	.MAKKP...KKLDEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRIT	75
NTDB id 499 SM12261 RS08315 WP 078228268.1	.MAKKP...KKLDEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRIT	75
NTDB id 408 SMU RS09530 WP 002262392.1	.MAKRI...KKTEEITKKFGDERKKALDDALKNIEKDFGKGAVMRLGER.AEQKVQVMSSGSLALDIALGAGGYPKGRIV	75
NTDB id 453 Spy49 1753c ACI62003.1	.MAKKL...KKNEEITKKFGDERRKALDDALKNIEKDFGKGAVMRLGER.AEQKVQVMSSGSLALDIALGAGGYPKGRIT	75
NTDB id 115 BSU 16940 NP 389576.2	MSDRQAALDMALKQIEKQFGKGSIMKLGEK.TDTRISTVPSGSLALDTALGIGGYPRGRIT	60
NTDB id 625 LCA RS02525 WP 011374196.1	MAKDERQAALDAALKKIEKNFGKGSIMRMGEK.VDTQVSTVSSGSLALDEALGVGGYPRGRIV	62
NTDB id 1313 DR RS12030 WP 010888966.1	.MSKD....ATKEISAPTDAKERSKATETAMSQIEKAFGKGSIMKLGAE.SKLDVQVVSTGSLSLDLALGVGGIPRGRIT	74
NTDB id 1245 Cj1673c YP 002345041.1	MDDNKRKSLDAALKSLDKTFGKGTILRLGDK.EVEQIDSIGTGSVGLDLALGIGGVPKGRIT	61
NTDB id 1214 NCTC11637 00359 SQJ03206.1	MAIDEDKQKAIISLAIKQIDKVF GKGA LVRLGDK.QVEKIDAISTGSLGLDLALGIGGVPKGRIT	63
NTDB id 1211 C694 RS00795 WP 000963128.1	MAIDEDKQKAIISLAIKQIDKVF GKGA LVRLGDK.QVEKIDSISTGSLGLDLALGIGGVPKGRIT	63
NTDB id 1334 RAOC RS04870 WP 004918236.1	MAKTETTSPNDDKKKALAAVLEKLDKTYGKGTVMKLGDTGTVDHNIEVIPSGSLGLDLALGVGGYPKGRIV	70
NTDB id 1130 NGFG RS03960 WP 003688695.1	MSDDKSKALAAALAQIEKSF GKGA IIMKMDGSQQUEENLEVISTGSLGLDLALGVGGLPRGRIV	62
NTDB id 1124 NGFG RS03960 WP 003688695.1	MSDDKSKALAAALAQIEKSF GKGA IIMKMDGSQQUEENLEVISTGSLGLDLALGVGGLPRGRIV	62
NTDB id 1123 OK783 RS03845 WP 003688695.1	MSDDKSKALAAALAQIEKSF GKGA IIMKMDGSQQUEENLEVISTGSLGLDLALGVGGLPRGRIV	62
NTDB id 312210 D1100 RS06175 WP 005598042.1	.MAADNKKKAQKNTVTKQIDPEQKEKALAAALAQIEKQFGKGSIMRLGDT.QALDIEAVSTGSLGLDAALGIGGLPMGRIV	78
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.MAENKKSSKNNTVVVKQVEPEQKKQALEAALAQIEKQFGKGSIMKLGQT.EQLDIESVSTGSLGLDLALGIGGLPMGRIV	78
NTDB id 1427 RS RS02760 WP 011000510.1	.ME.....DGKKAASMSAEKQKALAAALAQIEKQFGKGSIMKMGDA.EVEPVQVVSTGSLGLDVALGVGGLPRGRVV	70
NTDB id 1165 A1552VC RS01565 WP 000344154.1	MDENKQKALAAALGQIEKQFGKGSIMRLGDN.RAMDVETISTGSLSLDIALGAGGLPMGRIV	61
NTDB id 1142 GTF74 RS11550 WP 000344154.1	MDENKQKALAAALGQIEKQFGKGSIMRLGDN.RAMDVETISTGSLSLDIALGAGGLPMGRIV	61
NTDB id 1074 ABD1 RS10195 WP 000344167.1	MDENKSKALQAALSQIEKQFGKNTVMRLGDN.TVQAVEAVSTGSLTLDIALGIGGLPKGRIT	61
NTDB id 1022 ACIAD RS06390 WP 004925639.1	MDDNKSKALQAALSQIEKQFGKNTVMRLGDN.TVQAVEAVSTGSLTLDIALGIGGLPKGRIV	61
NTDB id 1205 PSJM300 05545 AFN77183.1	MDENKKRALAAALGQIEKQFGKGAVMRMGDH.DRQAIPSISTGSLGLDIALGIGGLPKGRIV	61
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 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 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 312210 D1100 RS06175 WP 005598042.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

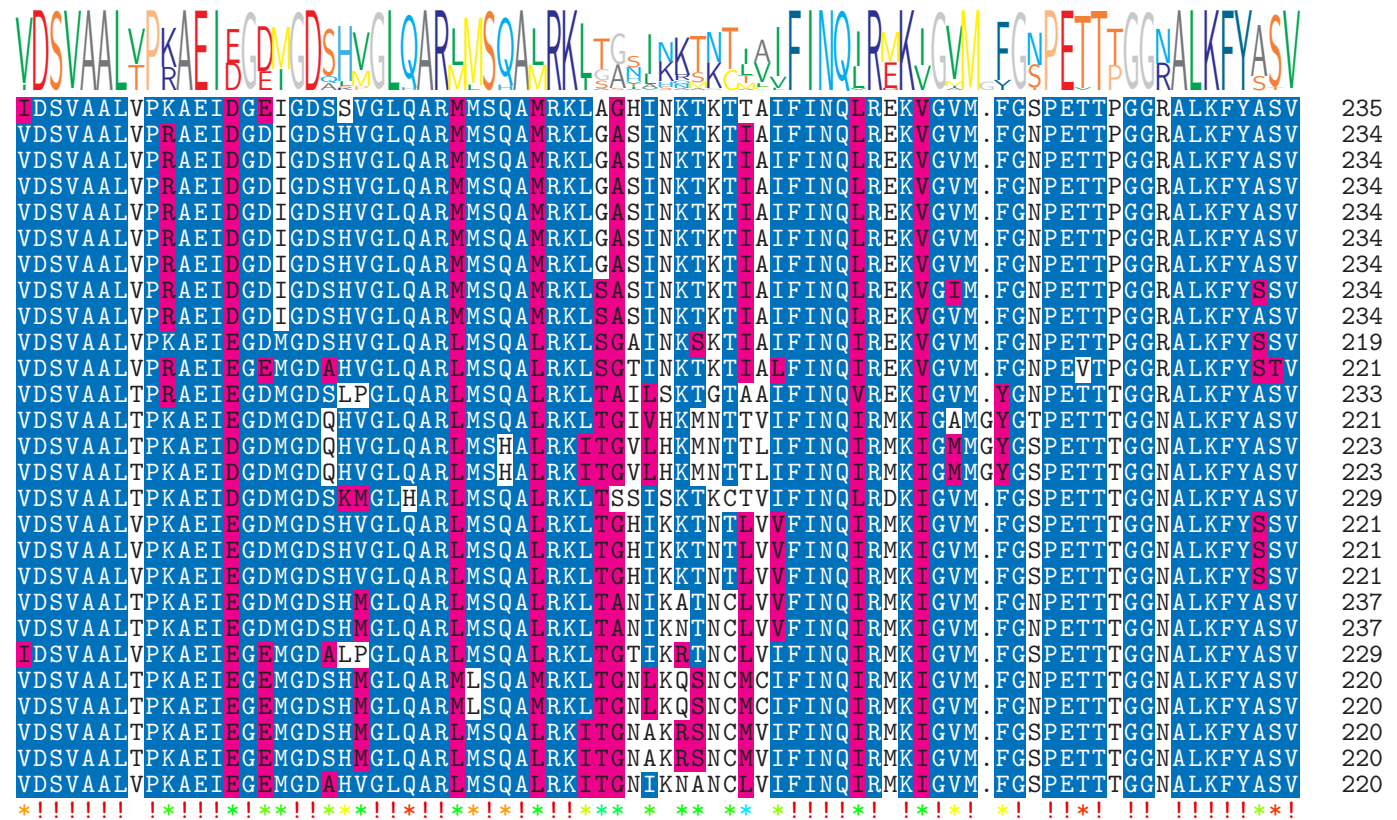
```



```

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 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 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 312210 D1100 RS06175 WP 005598042.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

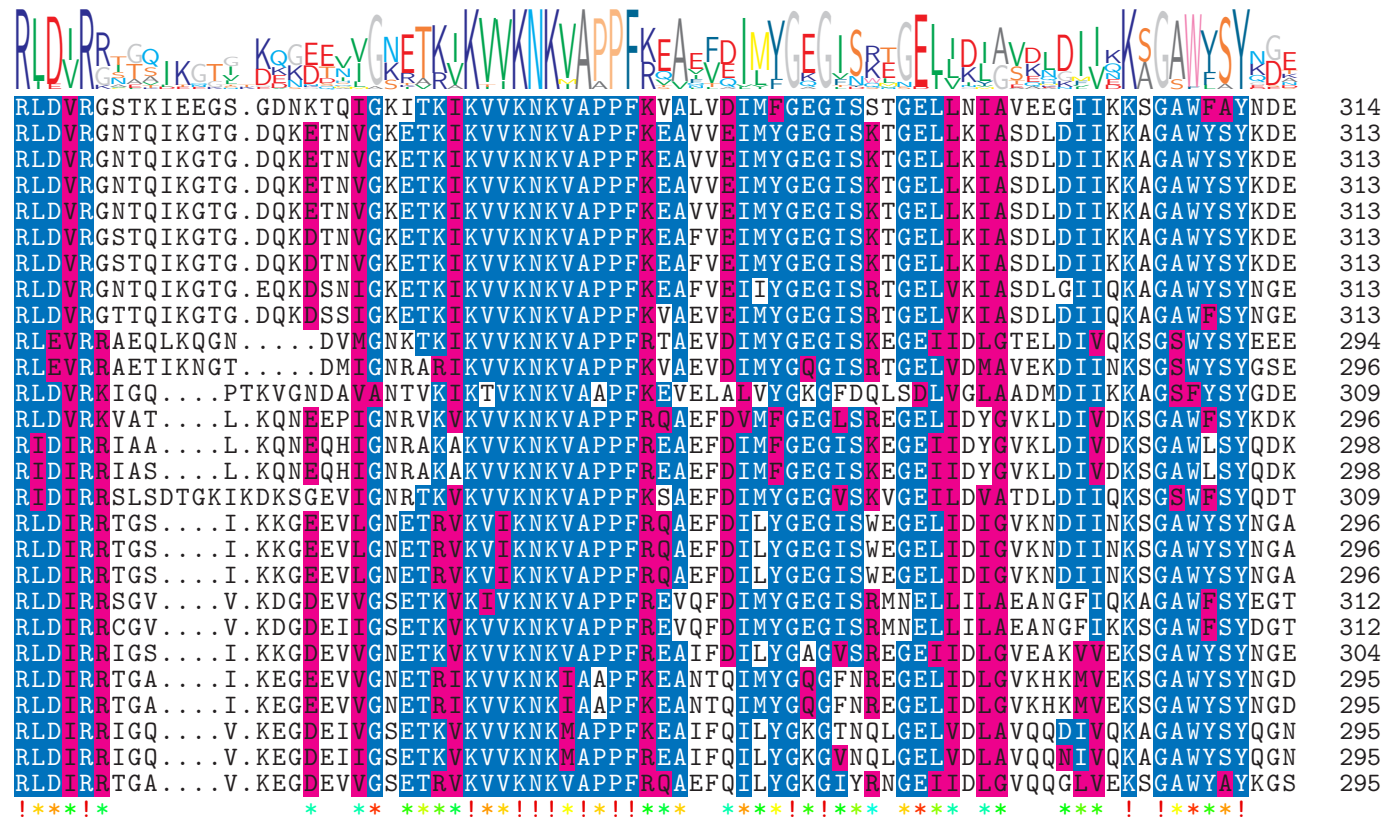
```



```

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 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 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 312210 D1100 RS06175 WP 005598042.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
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 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 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 312210 D1100 RS06175 WP 005598042.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

```

Sequence	Score
KIGQGAEKAKNYLKEHQDVFEIDHKVRAAHGLDDSEVAETEEETTAS...TKAKAKKEEKAVETEEIELELED...	387
KIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFLIDGEEVSEQD TENKKDE.....PKKEEA..VNEEVPLDLGDELE	383
KIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFLIDGEEVSEQD TENKKDE.....PKKEEA..VNEEVPLDLGDELE	383
KIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFLIDGEEVSEQD TENKKDE.....PKKEEA..VNEEVPLDLGDELE	383
KIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFLIDGEEVSEQD TENKKDE.....PKKEEA..VNEEVPLDLGDELE	383
KIGQGSSENAKKYLADNPEVFAEIDHQVRVQFGLIDGEEAAE...SKKDE.....VAQVDS..VNEEVTLDLGDELE	379
KIGQGSSENAKKYLADNPEIFDEIDHQVRVQFGLIDGEEIAE...SKKDE.....AAQVDS..VNEEVTLDLGDELE	379
KIGQGSSENAKKFLADNPEIFDDIDHKVRVQYGLIEDNTEEEKQSSKEK.....ETDEK..ADKNLVLELDDTTIE	380
KIGQGSSENAKRYLADHPQLFDEIDRKVRVKFGLLEESSEESAMAVASE.....E.....TDDLALDLNGIE	375
RLGQGRSENAKQFLKENKDIMLMIQEQUIREHYGLDNGGVVQQAEETQEEL...EFE.E.....	348
RIGQGRSENAKKNYLADHEDVEDEVRLKVRVQYGLSDVPEEDLPTTEDE.QI...NILPDDST...EE.....	355
RIGQGKEKTIAYIAERPEMEQETIDRVMAAIRAGNAGEAPALAPAPAAPEAAEA	363
KLGGGRENKSAFLKENPEIADEITKAIQNSMGI EGM I...SGSEDD..EGEE.....	343
KLGGGRENKALLKEDKALADEITLKI KESIGSNEEI...MPLPDE..PLEEME.....	347
KLGGGRENKALLKEDKALADEITLKI KESIGSNEEI...MPLPDE..PLEEME.....	347
KLGGGRD TVKELIKDNPELAELEAKIREKLQAK.....	343
KIGQGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI...TEGTQDET D...G.ERPEE.....	348
KIGQGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI...TEGTQDET D...G.ERPEE.....	348
KIGQGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI...TEGTQDET D...G.ERPEE.....	348
KIGQGKNNAIKWLKENPEIAEKIEQDIREQLISTPEK...TSAGEQ.NVLDADDVN.DFEDEAFNEEEL...	376
KIGQGKNNAVVKWLKENPEIADKLEQETIRNTLASPNPS...VLKATASDSNDES DVE.EF...SEEEL.....	372
RIGQGRDNCREFLRENAELARFIENKVRHGLVTPMG...AV.TLAEVEED.....	352
KIGQGKANACKYLKENPEIAKTLDKKLREMLLNPNEM...QLIAETSSAADDVEFG.AVPE.EF.....	354
KIGQGKANACKYLKENPEIAKTLDKKLREMLLNPNEM...QLIAETSSAADDVEFG.AVPE.EF.....	354
KIGQGKNNVIRYFEENNQIAEIEIERNIREQLLTGTN...GAVQ.I.EDEE EEPD...LLE.S.....	349
KIGQGKNNVIRYLEENPQISTEIEAVIREQLLTKASD...QTAA.HDETEEE EEPD...LLES.....	349
KIGQGKANAAKYLEENPEIQEIEEQIRAKLLVTSAN...TKATPVAEDLADAD...I.....	347

logo

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 527 SMSK321 RS11065 WP 001085454.1	IEIEE	384
NTDB id 499 SM12261 RS08315 WP 078228268.1	IEIEE	384
NTDB id 408 SMU RS09530 WP 002262392.1	LED..	383
NTDB id 453 Spy49 1753c ACI62003.1	IED..	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 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 312210 D1100 RS06175 WP 005598042.1	.....	376
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.....	372
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 1074 ABD1 RS10195 WP 000344167.1	.....	349
NTDB id 1022 ACIAD RS06390 WP 004925639.1	.....	349
NTDB id 1205 PSJM300 05545 AFN77183.1	.....	347

consensus

 non conserved
 similar
 ≥ 50% conserved