

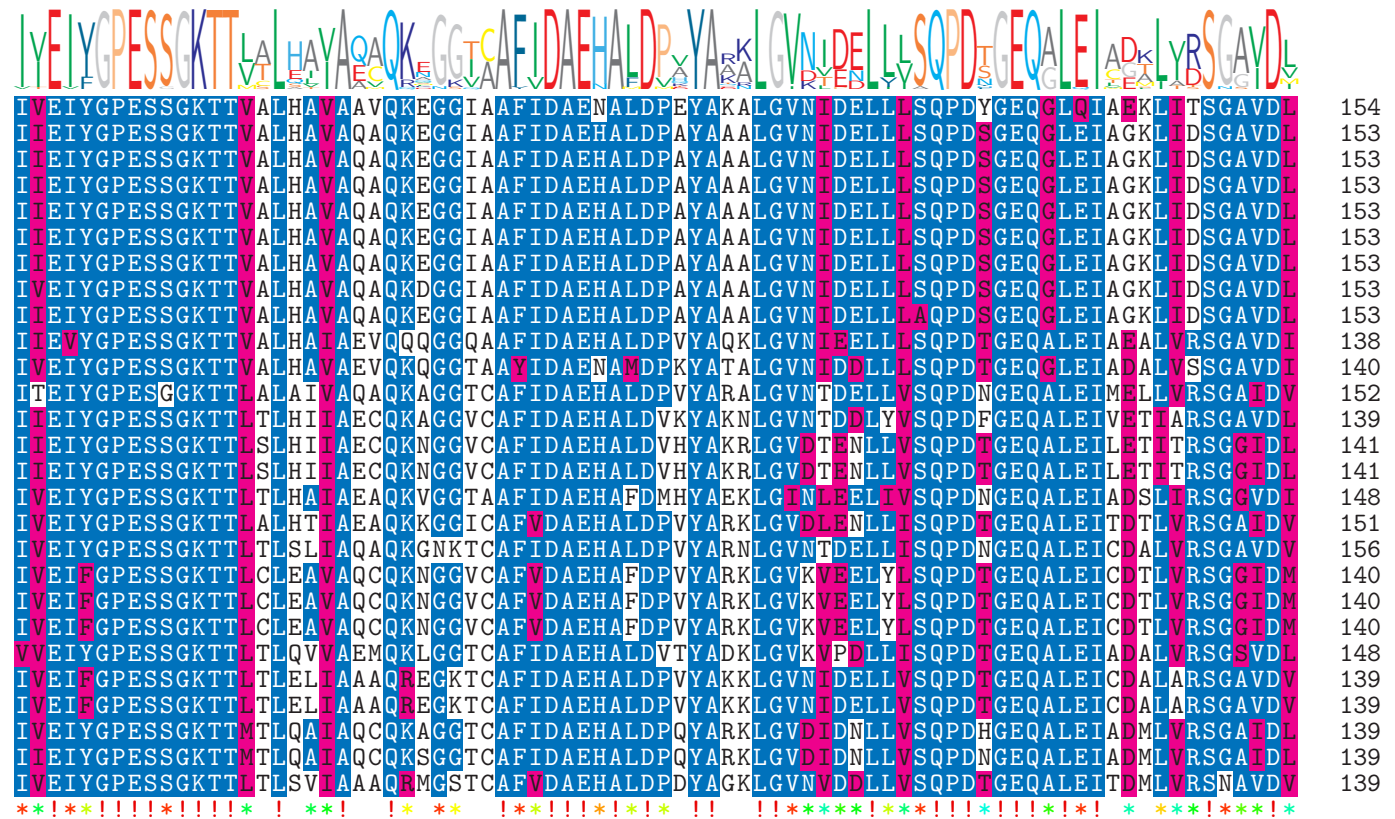
logo

NTDB id 600 KW2 RS01765 WP 011675413.1	MATKKKT.....NFDDITKKYGA	ERDKALADALALIEKD	FGKGSIMRLGEA	.ANQKVS	VSSGSLALD	I	ALGAGGY	PKGR	74
NTDB id 269 KZH43 RS08665 WP 001085462.1	.MAKKPK.....KLEEISKKFGA	EREKALNDALKLIEKD	FGKGSIMRLGER	.AEQKVQVM	SSGSLALD	I	ALGSGGY	PKGR	73
NTDB id 228 SPD RS09265 WP 001085462.1	.MAKKPK.....KLEEISKKFGA	EREKALNDALKLIEKD	FGKGSIMRLGER	.AEQKVQVM	SSGSLALD	I	ALGSGGY	PKGR	73
NTDB id 194 SPR RS08825 WP 001085462.1	.MAKKPK.....KLEEISKKFGA	EREKALNDALKLIEKD	FGKGSIMRLGER	.AEQKVQVM	SSGSLALD	I	ALGSGGY	PKGR	73
NTDB id 159 SP RS09750 WP 001085462.1	.MAKKPK.....KLEEISKKFGA	EREKALNDALKLIEKD	FGKGSIMRLGER	.AEQKVQVM	SSGSLALD	I	ALGSGGY	PKGR	73
NTDB id 527 SMSK321 RS11065 WP 001085454.1	.MAKKPK.....KLDEISKKFGA	EREKALNDALKLIEKD	FGKGSIMRLGER	.AEQKVQVM	SSGSLALD	I	ALGSGGY	PKGR	73
NTDB id 499 SM12261 RS08315 WP 078228268.1	.MAKKPK.....KLDEISKKFGA	EREKALNDALKLIEKD	FGKGSIMRLGER	.AEQKVQVM	SSGSLALD	I	ALGSGGY	PKGR	73
NTDB id 408 SMU RS09530 WP 002262392.1	.MAKRIK.....KTEEITKKFGD	ERRKALDDALKNIEKD	FGKGAVMRLGER	.AEQKVQVM	SSGSLALD	I	ALGAGGY	PKGR	73
NTDB id 453 Spy49 1753c ACI62003.1	.MAKKLK.....KNEEITKKFGD	ERRKALDDALKNIEKD	FGKGAVMRLGER	.AEQKVQVM	SSGSLALD	I	ALGAGGY	PKGR	73
NTDB id 115 BSU 16940 NP 389576.2	MS	DRQAALDMALKQIEKQ	FGKGSIMKLGEK	.TDTRIST	VP	SGSLALD	TALGIGGY	PRGR	58
NTDB id 625 LCA RS02525 WP 011374196.1	MAKD	ERQAALDAALKKIEKN	FGKGSIMRMGEK	.VDTQVST	VSSGSLAL	DEALGVGGY	PRGR		60
NTDB id 1313 DR RS12030 WP 010888966.1	MSKDATKEISAPTD	AKERSKATETAMSQIEKA	FGKGSIMKLGA	E.SKLDVQV	VSTGSLSLD	I	ALGVGGI	PRGR	72
NTDB id 1245 Cj1673c YP 002345041.1	MDDN	KRKSALDAALKSLDKT	FGKGTILRLGDK	.EVEQIDS	IGTGSVGLD	I	ALGIGGV	PKGR	59
NTDB id 1211 C694 RS00795 WP 000963128.1	M..AIDE	DKQKALISLAIKQIDKV	FGKGALVRLGDK	.QVEKIDS	ISTGSLGLD	I	ALGIGGV	PKGR	61
NTDB id 1214 NCTC11637 00359 SQJ03206.1	M..AIDE	DKQKALISLAIKQIDKV	FGKGALVRLGDK	.QVEKIDA	ISTGSLGLD	I	ALGIGGV	PKGR	61
NTDB id 1334 RAOC RS04870 WP 004918236.1	MAKTETT..SPND	DKKKALAAVLEKLDKT	YGKGTVMKLG	DGTVDHNI	EVIPSGSLGLD	I	ALGVGGY	PKGR	68
NTDB id 344468 EXD77 RS02515 WP 002964332.1	MSQNSRLRLVE..DNSV	DKTKALDAALSQIERA	FGKGSIMRLGQNDQV	VEIETVSTGSLSLD	I	ALGVGGL	PKGR		71
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.MAENKKSSKNNTVVVKQ..VEPEQ	KKQALEAALAQIEKQ	FGKGSIMKLQQT	.EQLDIES	VSTGSLGLD	I	ALGIGGL	PMGR	76
NTDB id 1130 NGFG RS03960 WP 003688695.1	MSD	DKSKALAAALAQIEKS	FGKGAIMKMDGSQ	QENLEVISTGSLGLD	I	ALGVGGL	PRGR		60
NTDB id 1124 NGFG RS03960 WP 003688695.1	MSD	DKSKALAAALAQIEKS	FGKGAIMKMDGSQ	QENLEVISTGSLGLD	I	ALGVGGL	PRGR		60
NTDB id 1123 OK783 RS03845 WP 003688695.1	MSD	DKSKALAAALAQIEKS	FGKGAIMKMDGSQ	QENLEVISTGSLGLD	I	ALGVGGL	PRGR		60
NTDB id 1427 RS RS02760 WP 011000510.1	.MEDG.....KKA..SMSA	EKQKALAAALAQIEKQ	FGKGSIMKMGDA	.EVEPVQV	VSTGSLGLD	I	ALGVGGL	PRGR	68
NTDB id 1165 A1552VC RS01565 WP 000344154.1	MDEN	KQKALAAALGQIEKQ	FGKGSIMRLGDN	.RAMDVET	ISTGSLSLD	I	ALGAGGL	PMGR	59
NTDB id 1142 GTF74 RS11550 WP 000344154.1	MDEN	KQKALAAALGQIEKQ	FGKGSIMRLGDN	.RAMDVET	ISTGSLSLD	I	ALGAGGL	PMGR	59
NTDB id 1022 ACIAD RS06390 WP 004925639.1	MDDN	KSKALQAALSQIEKQ	FGKNTVMRLGDN	.TVQAVEA	VSTGSLTLD	I	ALGIGGL	PKGR	59
NTDB id 1074 ABD1 RS10195 WP 000344167.1	MDEN	KSKALQAALSQIEKQ	FGKNTVMRLGDN	.TVQAVEA	VSTGSLTLD	I	ALGIGGL	PKGR	59
NTDB id 1205 PSJM300 05545 AFN77183.1	MDEN	KKRALAAALGQIEKQ	FGKGAVMRMGDH	.DRQAIPS	ISTGSLGLD	I	ALGIGGL	PKGR	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 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 344468 EXD77 RS02515 WP 002964332.1
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

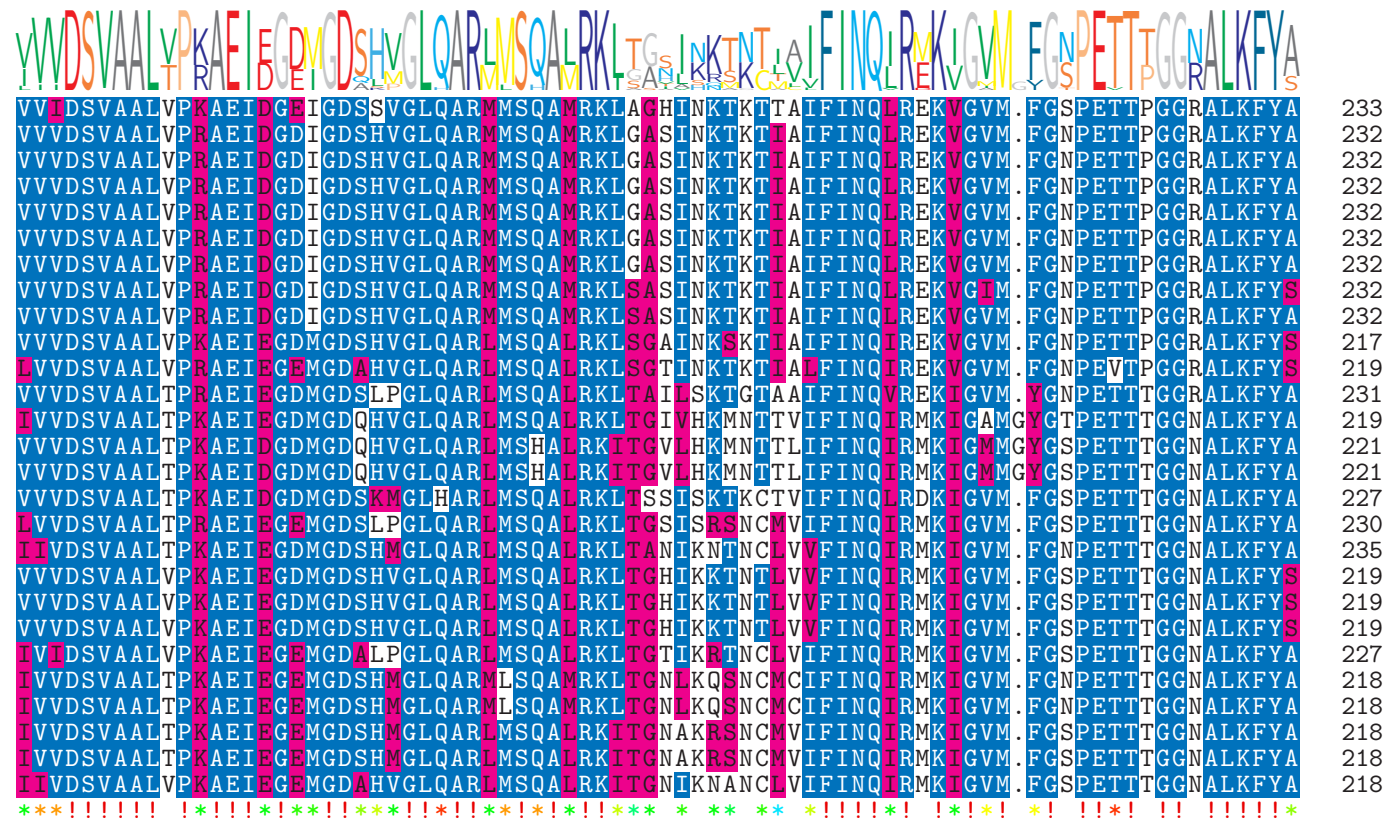
```



```

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 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 344468 EXD77 RS02515 WP 002964332.1
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

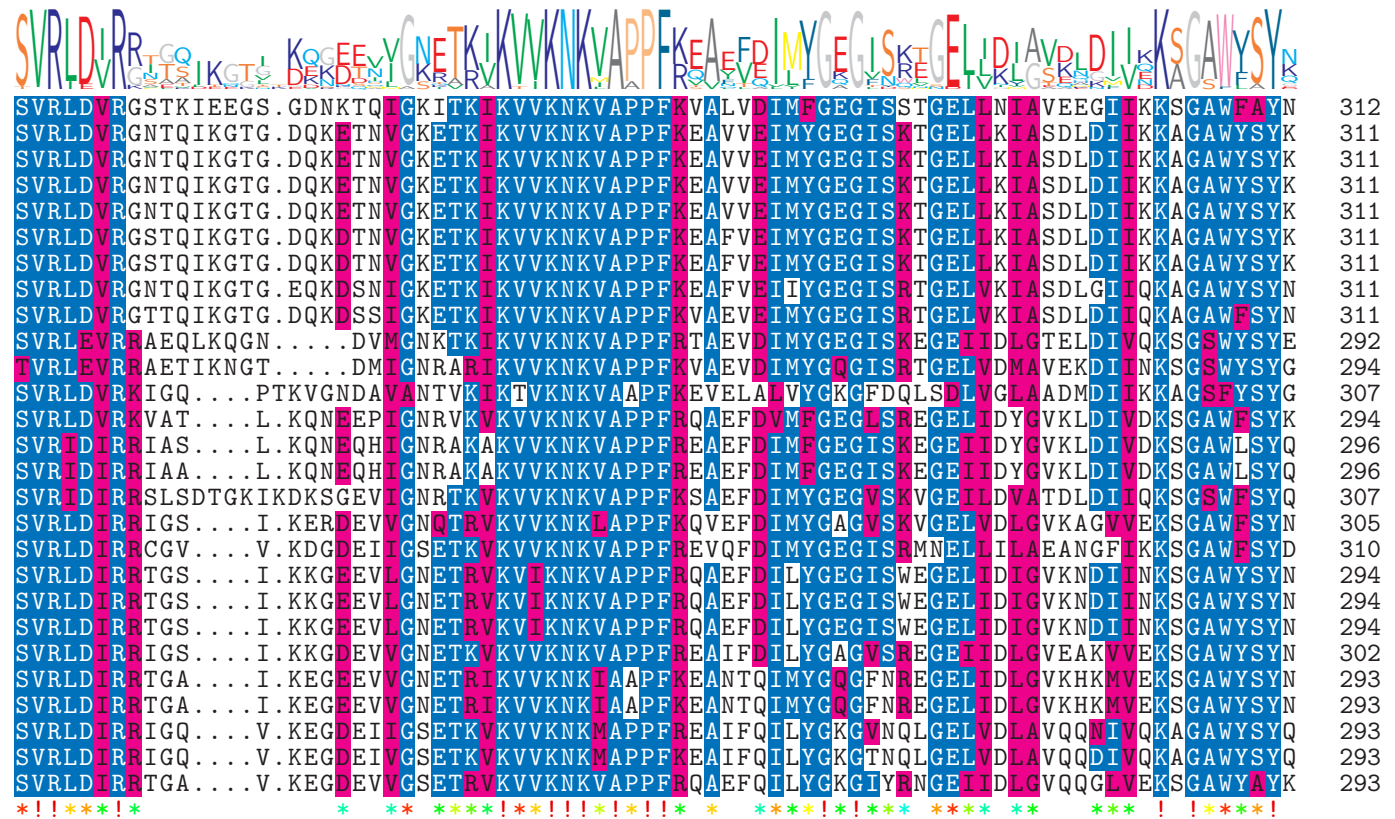
```



```

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 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 344468 EXD77 RS02515 WP 002964332.1
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 600 KW2 RS01765 WP 011675413.1	DEKIGQGA	EKAKNYLKEHQDV	DEIDHKVRAAHG	LDDSEVAETEEETTA	.SKTKAKAKKEEKAVETEEIELELED....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKK	.DE....PKKEEA..VNEEVPLDLGDELEI	384
NTDB id 228 SPD RS09265 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKK	.DE....PKKEEA..VNEEVPLDLGDELEI	384
NTDB id 194 SPR RS08825 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKK	.DE....PKKEEA..VNEEVPLDLGDELEI	384
NTDB id 159 SP RS09750 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKK	.DE....PKKEEA..VNEEVPLDLGDELEI	384
NTDB id 527 SMSK321 RS11065 WP 001085454.1	DEKIGQGS	ENAKKYLAADNPEV	FAEIDHQVRVQFGL	IDGEEAAE....SKK	.DE....VAQVDS..VNEEVTLDLGDELEI	380
NTDB id 499 SM12261 RS08315 WP 078228268.1	DEKIGQGS	ENAKKYLAADNPEIF	DEIDHQVRVQFGL	IDGEEIAE....SKK	.DE....AAQVDS..VNEEVTLDLGDELEI	380
NTDB id 408 SMU RS09530 WP 002262392.1	GEKIGQGS	ENAKKFLADNPEIF	DDIDHKVVRVQYGL	IEEDNTEEKQSSKEK	ETDEK..ADKNLVLELDDTIEL	381
NTDB id 453 Spy49 1753c ACI62003.1	GEKIGQGS	ENAKRYLADHPQLF	DEIDRKVRVKFGL	LEESEEEESAMAVASE	E.....TDDLALDLNGIEI	376
NTDB id 115 BSU 16940 NP 389576.2	EERLGGG	RENAKQFLKENKDI	MLMIQEIREHYGL	DNNGVVQQAEETQE	.EL.EFE.E.....	348
NTDB id 625 LCA RS02525 WP 011374196.1	SERIGQG	RENAKNYLADHEDV	DEVRLKVRAAYG	ISDVPPEEDLPTTEDE	..QI.NILPDDST.....EE.....	355
NTDB id 1313 DR RS12030 WP 010888966.1	DERIGQG	KEKTIAYIAERPEME	QEIRDRVMAAIRAG	NAGEAPALAPAPAAPE	EAAEA.....	363
NTDB id 1245 Cj1673c YP 002345041.1	DKKLGGG	RENSKAFLENPEIA	DEITKAIQNSMG	TEGMISGSEDDEGEE	.....	343
NTDB id 1211 C694 RS00795 WP 000963128.1	DKKLGGG	RENAKALLKEDKAL	ADEITLKIKESIG	SNEEIMPLPDEPLEEME	.....	347
NTDB id 1214 NCTC11637 00359 SQJ03206.1	DKKLGGG	RENAKALLKEDKAL	ADEITLKIKESIG	SNEEIMPLPDEPLEEME	.....	347
NTDB id 1334 RAOC RS04870 WP 004918236.1	DTKLGGG	RDITVKELIKDNPE	LAELEAKIREKLQAK	.....	.....	343
NTDB id 344468 EXD77 RS02515 WP 002964332.1	SQRLGGG	RENAKQYLLKDNPE	VAREIETT	LRQNAGLIAEQFLDD	GGPEEDAAGAAEM.....	361
NTDB id 1389 A4U84 RS07560 WP 021112712.1	GTKIGQG	KNNAVKWLKENPEI	ADKLEQEIRNTLAS	NSPNSVLKAT..ASDSN	DESDVE.....EFSEEEL.....	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	GAKIGQG	KDNVRVWLKENPEI	SDEIDAKIRALNGV	EMHITEGTQ..DET	DGER.....PEE.....	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	GAKIGQG	KDNVRVWLKENPEI	SDEIDAKIRALNGV	EMHITEGTQ..DET	DGER.....PEE.....	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	GAKIGQG	KDNVRVWLKENPEI	SDEIDAKIRALNGV	EMHITEGTQ..DET	DGER.....PEE.....	348
NTDB id 1427 RS RS02760 WP 011000510.1	GERIGQG	RDNCREFLRENAEL	AREIENKVREHLG	VTPMGAVTLA...EE	VEED.....	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	GDKIGQG	KANACKYLLKENPEI	AKTLDKKLREMLLN	PENMQLIAE..TSSA	ADDVEFG.....AVPEEF.....	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	GDKIGQG	KANACKYLLKENPEI	AKTLDKKLREMLLN	PENMQLIAE..TSSA	ADDVEFG.....AVPEEF.....	354
NTDB id 1022 ACIAD RS06390 WP 004925639.1	GNKIGQG	KNNVIRYFEENNP	QISTEIEAVIREQLL	TKASDQTA...HDE	TEEPDLL.....ES.....	349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	GNKIGQG	KNNVIRYFEENNP	QIAEEIERNIREQLL	TTGTNGAVQ...I	EDEEPPDLL.....LES.....	349
NTDB id 1205 PSJM300 05545 AFN77183.1	GSKIGQG	KANAACKYLEENPEI	IGQIEEQIRAKLLV	TSANTKATP..VAED	LADADI.....	347
consensus	**!!!***** ** ***** ***** ** *					*

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 527 SMSK321 RS11065 WP 001085454.1	EIEE	384
NTDB id 499 SM12261 RS08315 WP 078228268.1	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 344468 EXD77 RS02515 WP 002964332.1	....	361
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