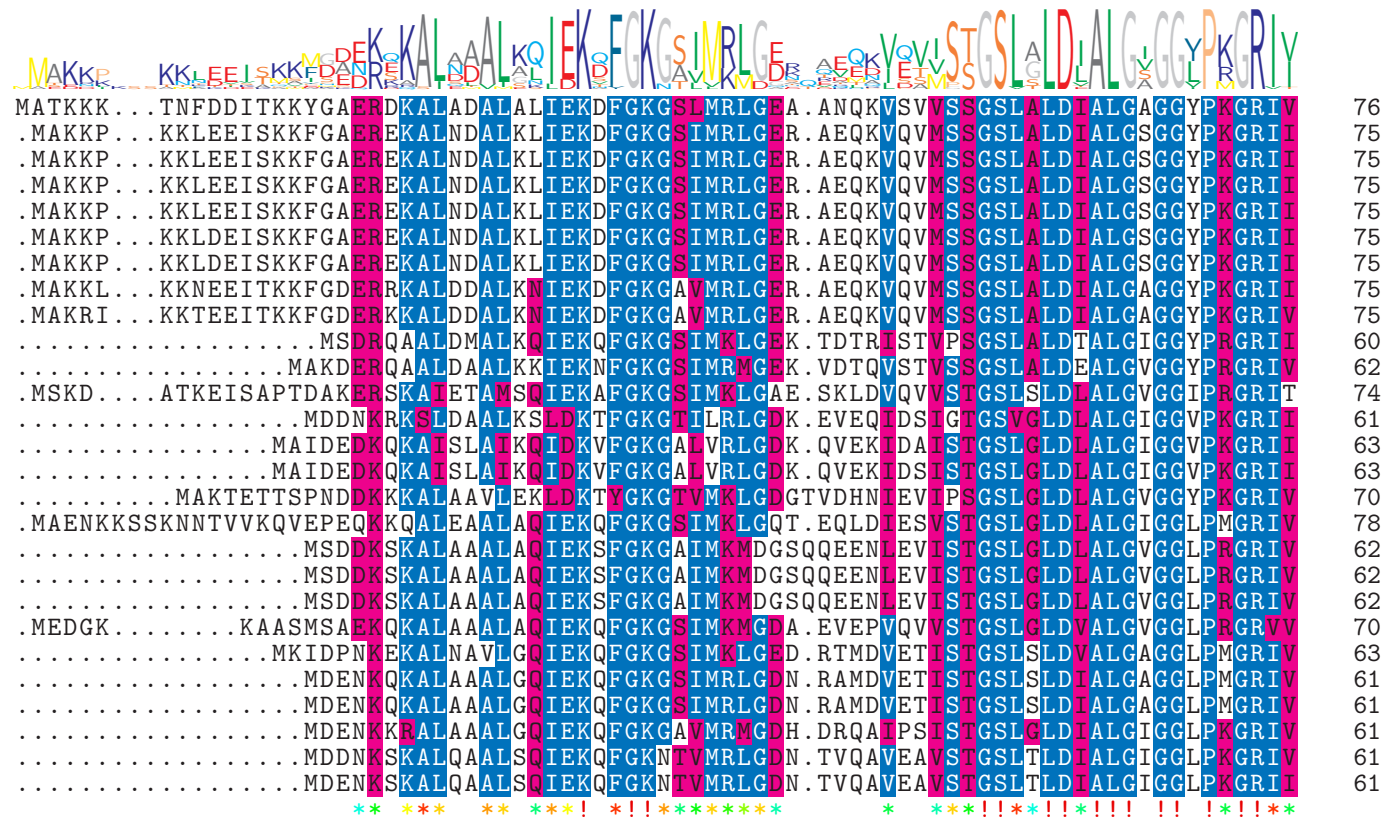


```

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 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
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 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 86511 K5626 RS14270 WP 025011663.1
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 1022 ACIAD RS06390 WP 0004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

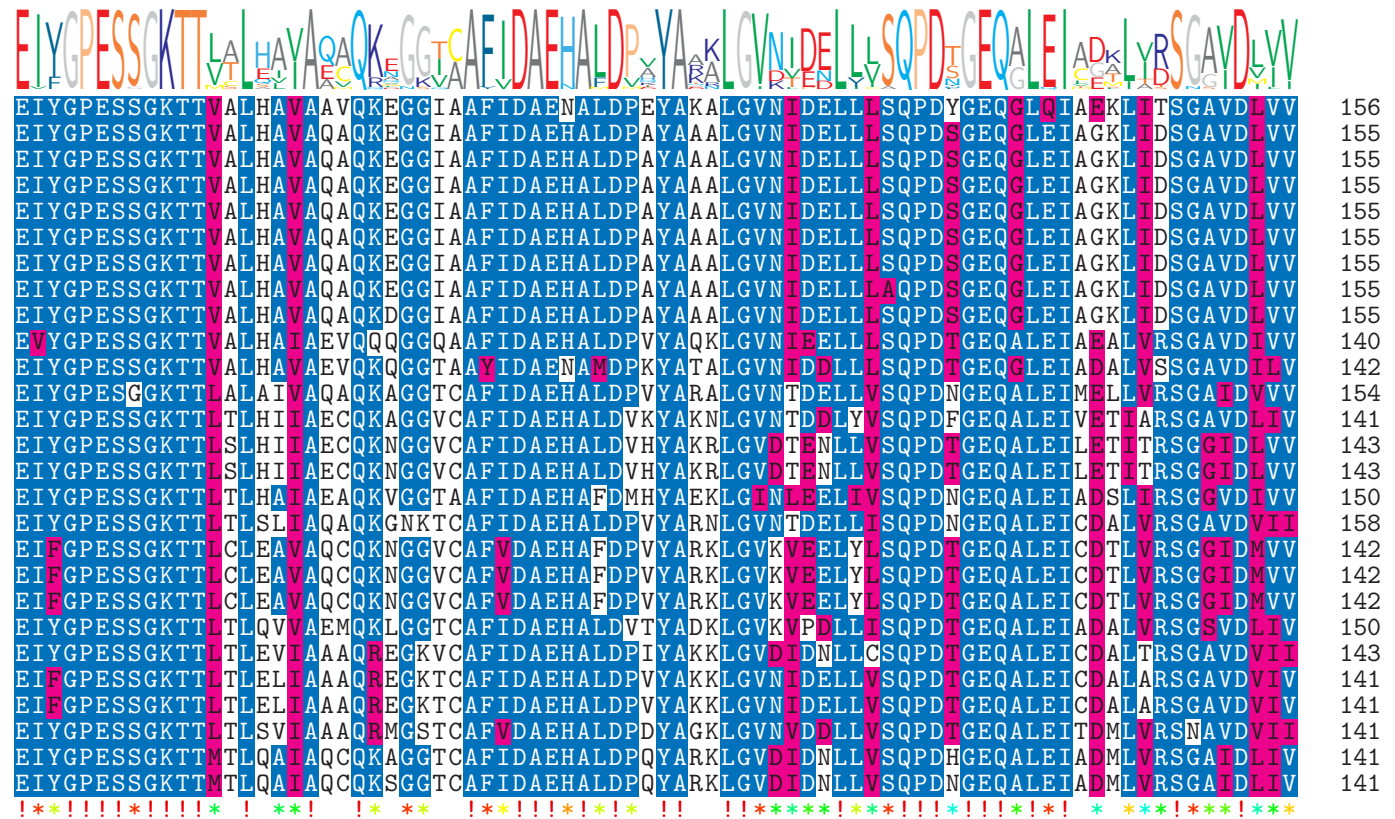
```



```

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 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
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 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 86511 K5626 RS14270 WP 025011663.1
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 1022 ACIAD RS06390 WP 0004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

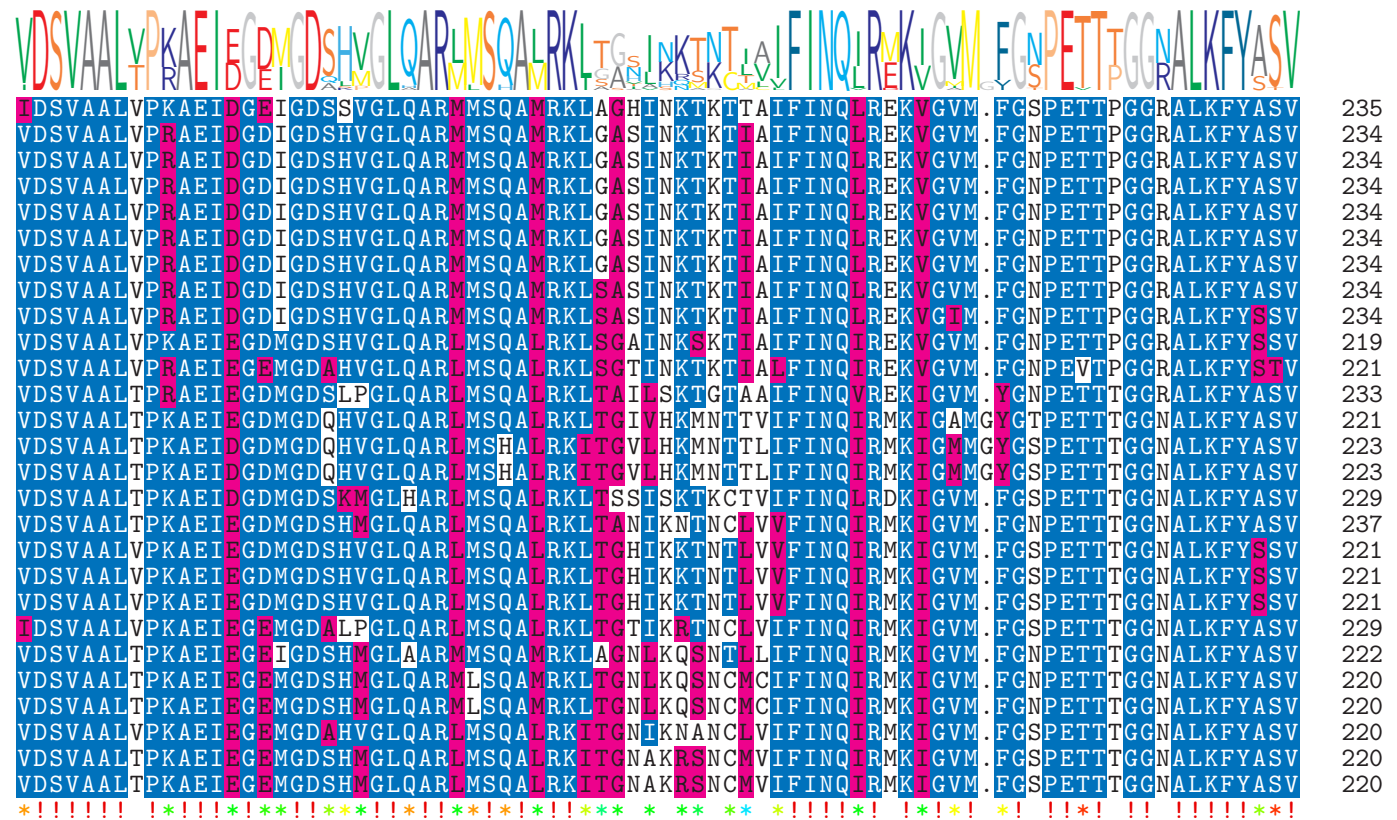
```



```

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 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
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 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 86511 K5626 RS14270 WP 025011663.1
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 1022 ACIAD RS06390 WP 0004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

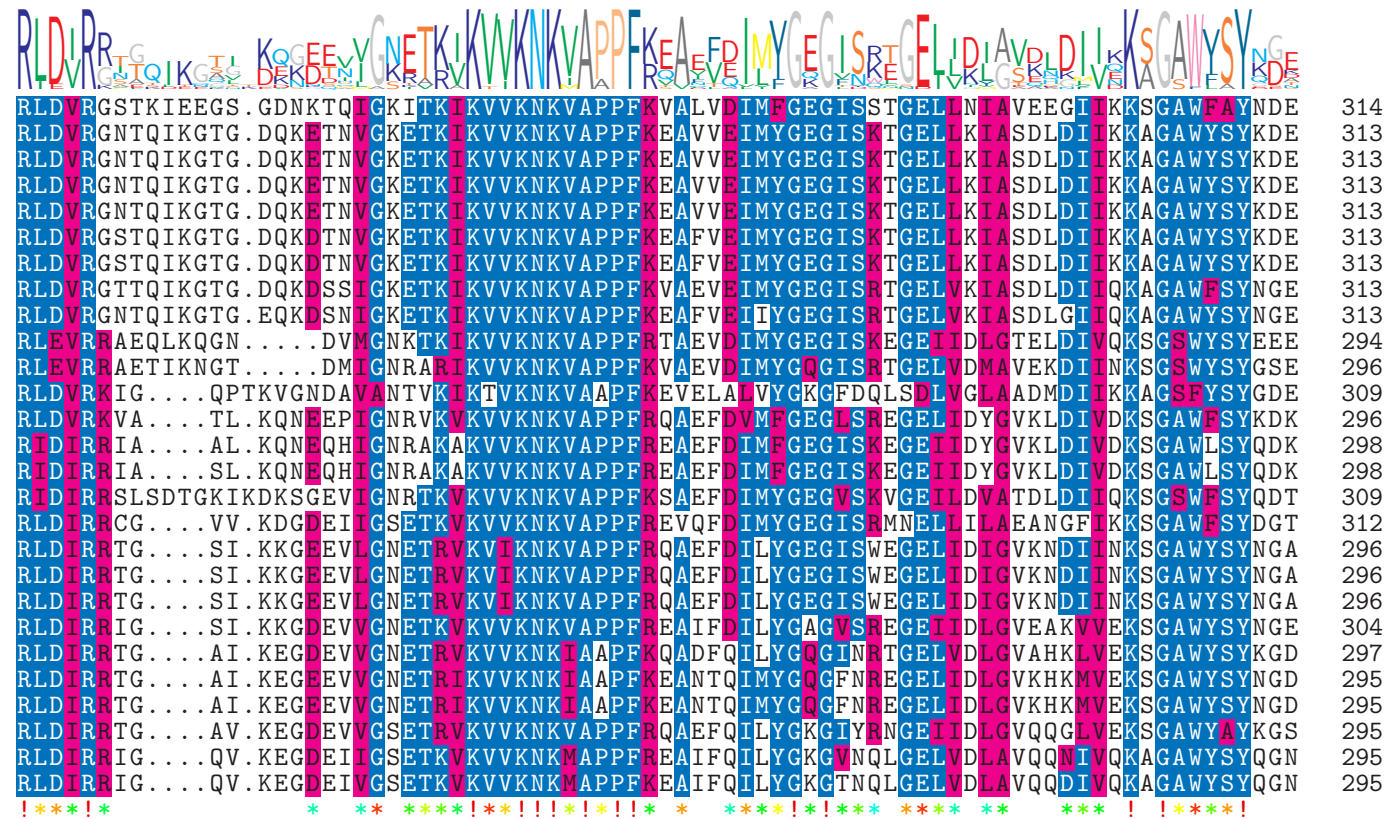
```



```

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 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
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 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 86511 K5626 RS14270 WP 025011663.1
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 1022 ACIAD RS06390 WP 0004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

```



logo

NTDB id 600 KW2 RS01765 WP 011675413.1	KIGQGA	EKAKNYLKEHQDV	DEIDHKVRAAHG	LDDSEVAETEEETT	ASKTKAKAKKEEK	AVETEEIELELED	.....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	KIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTEN	KKDE	PKKEEA..	VNEEVPLDLGDELEIEIE	387
NTDB id 228 SPD RS09265 WP 001085462.1	KIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTEN	KKDE	PKKEEA..	VNEEVPLDLGDELEIEIE	387
NTDB id 194 SPR RS08825 WP 001085462.1	KIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTEN	KKDE	PKKEEA..	VNEEVPLDLGDELEIEIE	387
NTDB id 159 SP RS09750 WP 001085462.1	KIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTEN	KKDE	PKKEEA..	VNEEVPLDLGDELEIEIE	387
NTDB id 527 SMSK321 RS11065 WP 001085454.1	KIGQGS	ENAKKYLADNPEV	FAEIDHQVRVQFGL	IDGEEAAE....	SKKDE	VAQVDS..	VNEEVTLDLGDELEIEIE	383
NTDB id 499 SM12261 RS08315 WP 078228268.1	KIGQGS	ENAKKYLADNPEIF	DEIDHQVRVQFGL	IDGEEIAE....	SKKDE	AAQVDS..	VNEEVTLDLGDELEIEIE	383
NTDB id 453 Spy49 1753c ACI62003.1	KIGQGS	ENAKRYLADHPQLF	DEIDRKVRVKFGL	LEESEEEESAMAV	ASE	E.....	TDDLALDLNGIEIED	378
NTDB id 408 SMU RS09530 WP 002262392.1	KIGQGS	ENAKKFLADNPEIF	DDIDHKVRVQYGL	IEEDNTEEEKQSS	KEK	ETDEK..	ADKNLVLELDDTIELED	383
NTDB id 115 BSU 16940 NP 389576.2	RLGQG	RENAKQFLKENKD	IMLMIQEQIREHY	GLDNNGVVQQAE	ETQEEL	EFEE.....	.....	348
NTDB id 625 LCA RS02525 WP 011374196.1	RIGQG	RENAKNYLADHED	VEDEVRLKVRAA	YGISDVPEEDLP	TTETE	QI.NILPDDST	EE.....	355
NTDB id 1313 DR RS12030 WP 010888966.1	RIGQG	KEKTIAYIAERP	EMEQEIRDRVMA	AIRAGNAGEAP	ALAPAPAAP	EAAEA.....	.....	363
NTDB id 1245 Cj1673c YP 002345041.1	KLGGQ	RENSKAFLENPEI	ADEITKAIQNSM	GIEGM.....	ISGSED..	DEGEE.....	.....	343
NTDB id 1214 NCTC11637 00359 SQJ03206.1	KLGGQ	RENAKALLKEDK	ALADEITLKIK	ESIGSNEE....	IMPLPD..	EPL EEME	.....	347
NTDB id 1211 C694 RS00795 WP 000963128.1	KLGGQ	RENAKALLKEDK	ALADEITLKIK	ESIGSNEE....	IMPLPD..	EPL EEME	.....	347
NTDB id 1334 RAOC RS04870 WP 004918236.1	KLGGQ	RDITVKELIKD	NPELAEELEAK	IREKLQAK.....	.....	.....	.....	343
NTDB id 1389 A4U84 RS07560 WP 021112712.1	KIGQG	KNNAVKWLKEN	PEIADKLEQEIR	NTLASNP.....	SVLKATAS	DSNDES	DVEEF...SEE..EL.....	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	KIGQG	KDNVRVWLKEN	PEISDEIDAKI	RALNGVEMH....	ITEGT.....	QDET	D...GERPEE.....	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	KIGQG	KDNVRVWLKEN	PEISDEIDAKI	RALNGVEMH....	ITEGT.....	QDET	D...GERPEE.....	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	KIGQG	KDNVRVWLKEN	PEISDEIDAKI	RALNGVEMH....	ITEGT.....	QDET	D...GERPEE.....	348
NTDB id 1427 RS RS02760 WP 011000510.1	RIGQG	RDNCREFLRENA	EELAREIENKVR	EHLGVTPM....	GAVTL..A	EVEEED	.....	352
NTDB id 86511 K5626 RS14270 WP 025011663.1	KIGQG	RANAGKFLKEN	PEVAAEIEAAL	RAKLLSKAE....	AAPASA..	ETGEGN	VDLET...GEVF.....	354
NTDB id 1165 A1552VC RS01565 WP 000344154.1	KIGQG	KANACKYLYKEN	PEIAKTLDKKL	REMLLNPNEN....	MQ.LIA..	ETSSA	ADDVEF...GAVPEEF.....	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	KIGQG	KANACKYLYKEN	PEIAKTLDKKL	REMLLNPNEN....	MQ.LIA..	ETSSA	ADDVEF...GAVPEEF.....	354
NTDB id 1205 PSJM300 05545 AFN77183.1	KIGQG	KANAACKYLEEN	PEIGQIEEQ	IRAKLLV	TSA.....	NTKATP	VAEDLADADI.....	347
NTDB id 1022 ACIAD RS06390 WP 004925639.1	KIGQG	KNNVIRYLEEN	PQISTEIEAV	IREQLLT	TKAS....	DQTAA.HD	ETEEEPDLLES.....	349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	KIGQG	KNNVIRYFEEN	NQIAEEIERN	IREQLLT	TGT....	NGAVQ.I.	EDEEEDPDLLE....S.....	349
consensus	**!!!	*****	**	*****	*****	**	*	

logo

NTDB id 600 KW2 RS01765 WP 011675413.1	.	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 453 Spy49 1753c ACI62003.1	.	378
NTDB id 408 SMU RS09530 WP 002262392.1	.	383
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 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 86511 K5626 RS14270 WP 025011663.1	.	354
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 1022 ACIAD RS06390 WP 004925639.1	.	349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	.	349

consensus

 non conserved
 similar
 ≥ 50% conserved