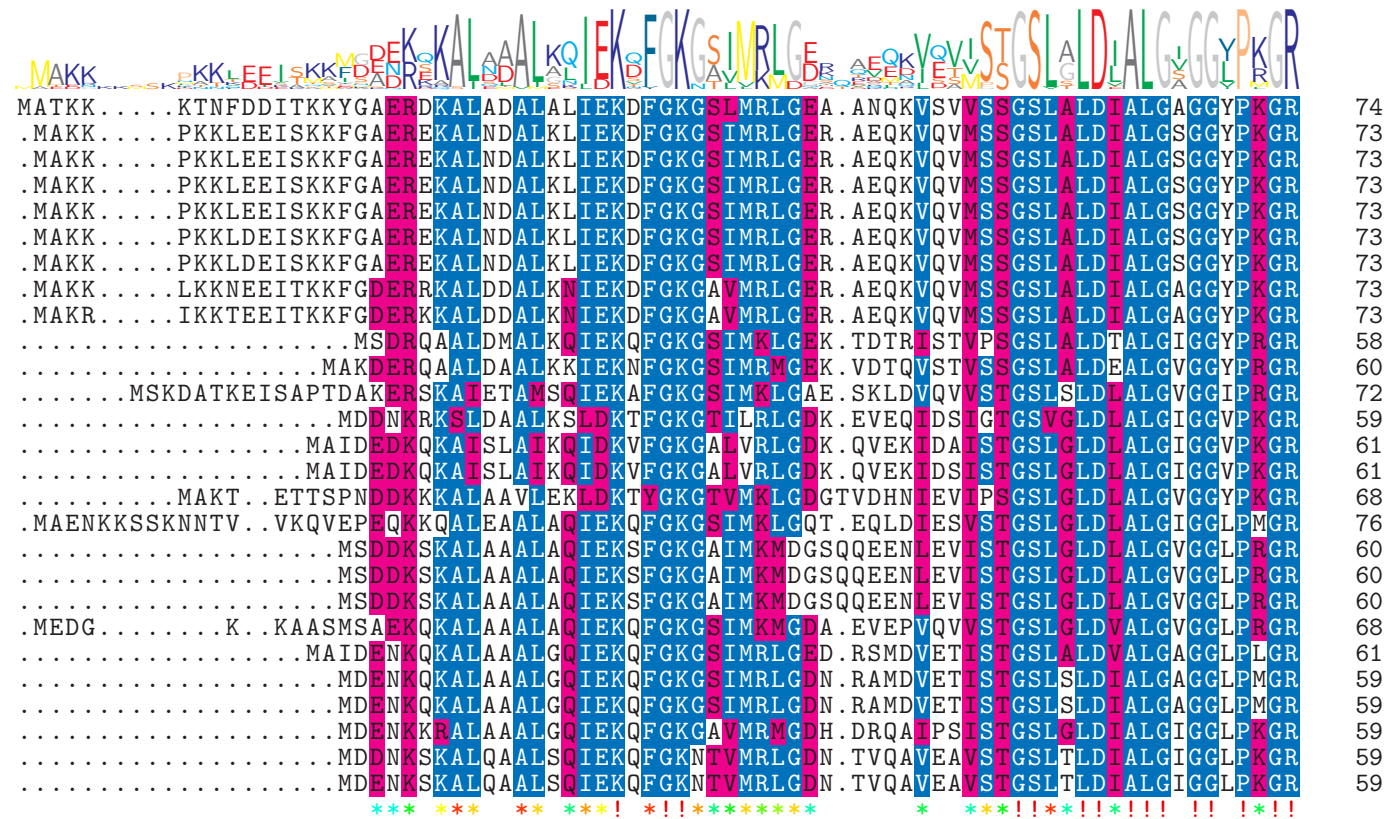


```

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 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
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 971239 WKC53 RS17290 WP 004237869.1
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

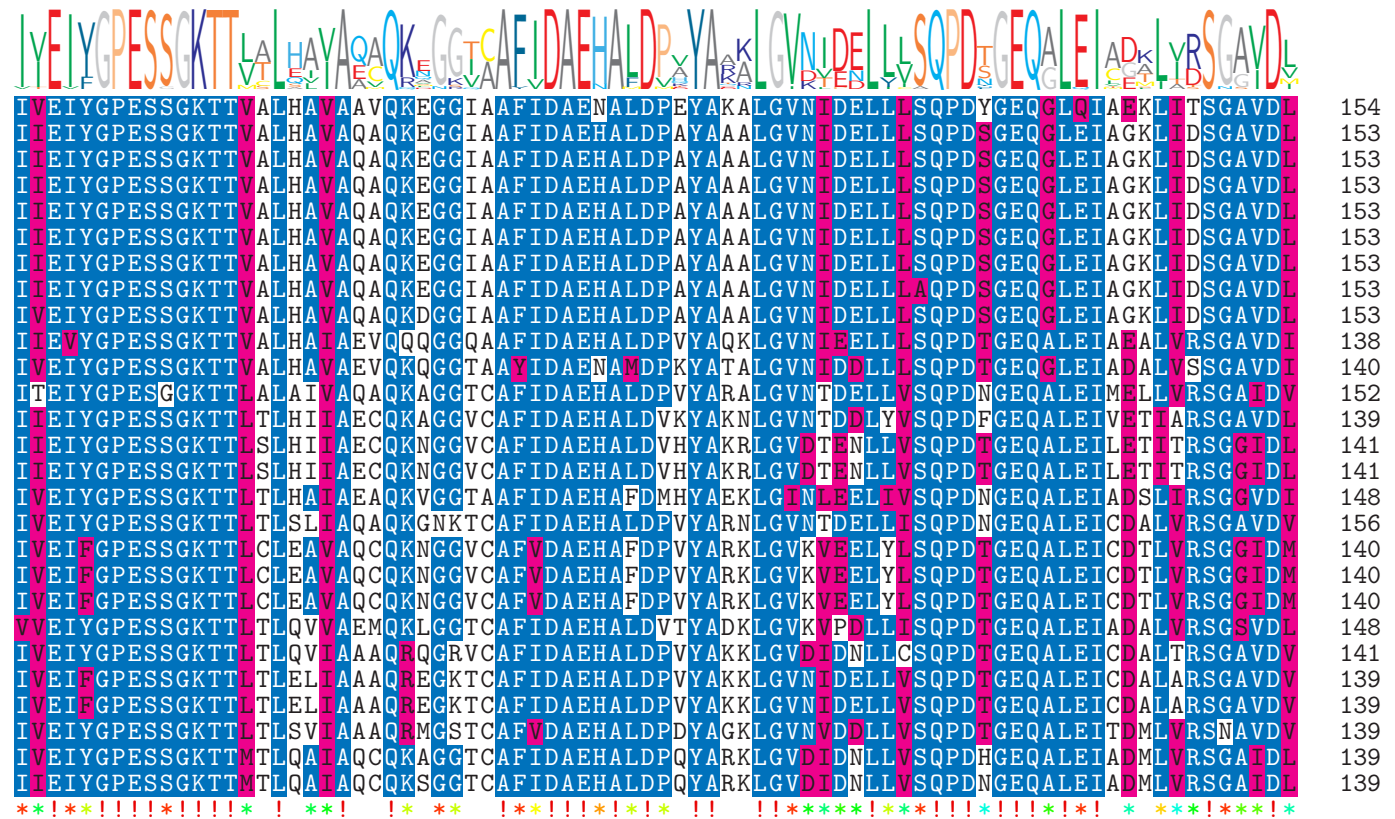
```



```

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 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002263292.1
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 01100051.1
NTDB id 971239 WKC53 RS17290 WP 004237869.1
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

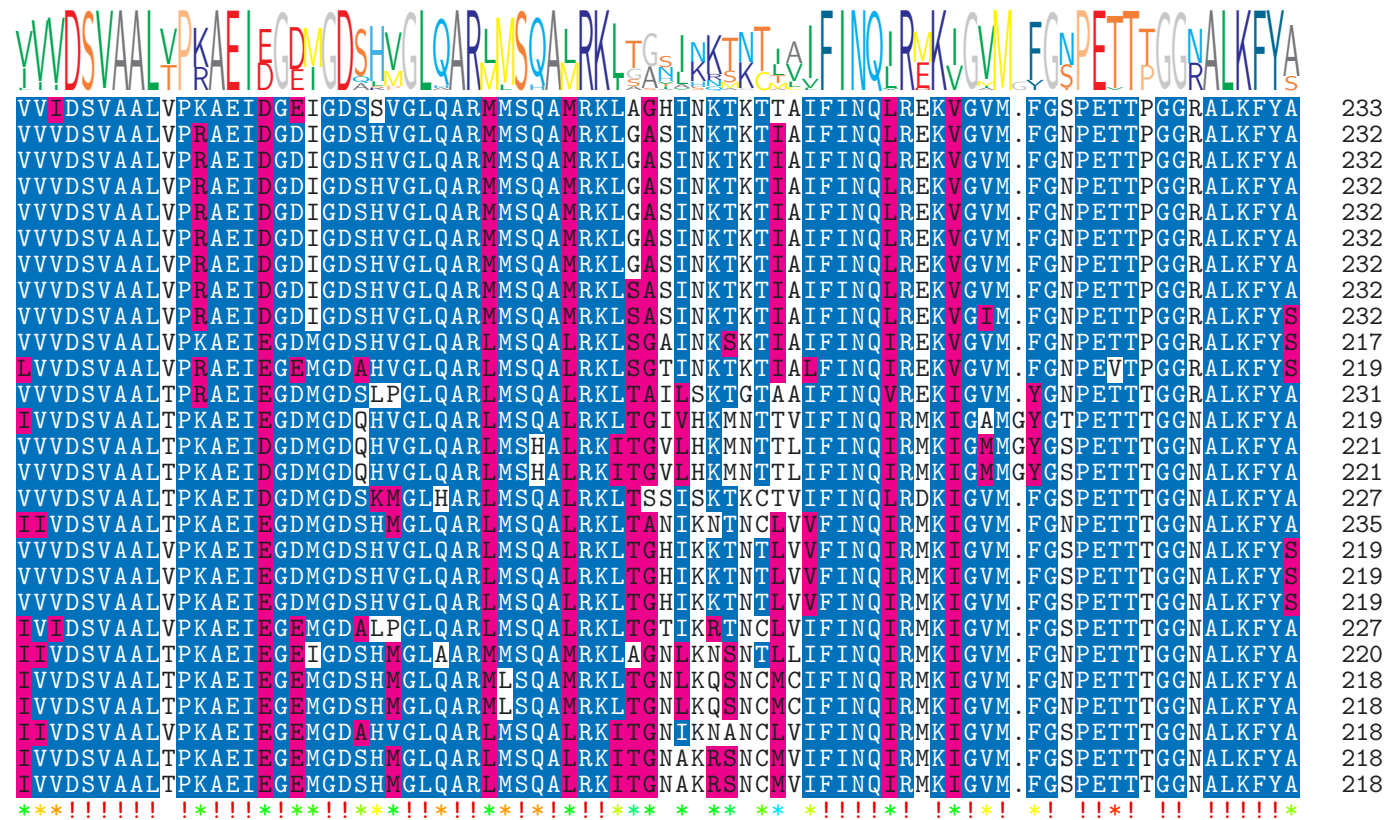
```



```

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 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
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 971239 WKC53 RS17290 WP 004237869.1
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

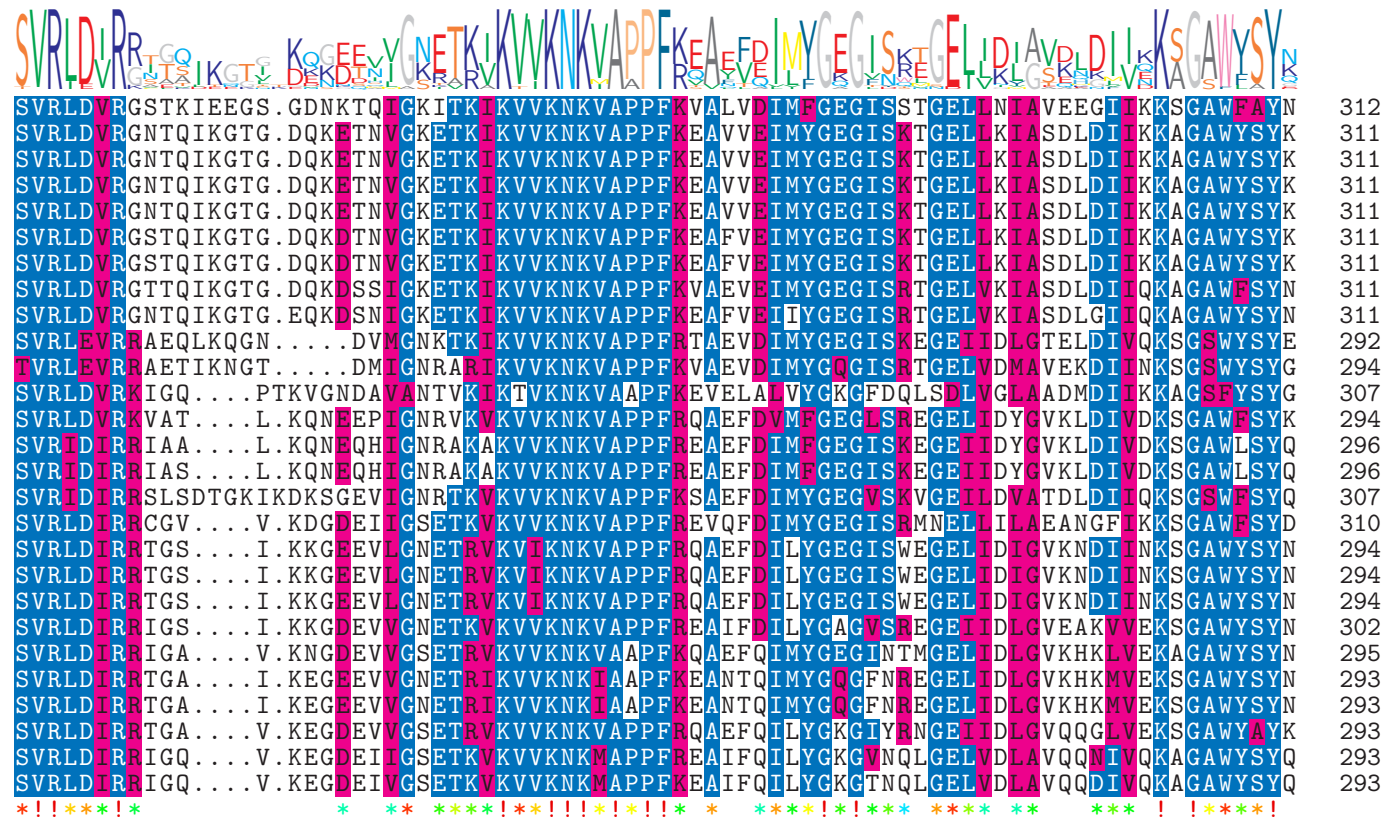
```



```

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 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
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 971239 WKC53 RS17290 WP 004237869.1
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	DEKIGQGA	EKAKNYLKEHQDV	FEIDHKVRAAHGL	LDDSEVAETEEETTA	.SKTKAKAKKEEKAVET	EEIELELED....	387			
NTDB id 269 KZH43 RS08665 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKK	.DE....PKKEEA..VNE	EEVPLDLGDELEI	384			
NTDB id 228 SPD RS09265 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKK	.DE....PKKEEA..VNE	EEVPLDLGDELEI	384			
NTDB id 194 SPR RS08825 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKK	.DE....PKKEEA..VNE	EEVPLDLGDELEI	384			
NTDB id 159 SP RS09750 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKK	.DE....PKKEEA..VNE	EEVPLDLGDELEI	384			
NTDB id 499 SM12261 RS08315 WP 078228268.1	DEKIGQGS	ENAKKYLADNPEIF	DEIDHQVRVQFGL	IDGEEIAES....KK	.DE....AAQVDS..VNE	EEVTLDLGDELEI	380			
NTDB id 527 SMSK321 RS11065 WP 001085454.1	DEKIGQGS	ENAKKYLADNPEVFAE	IDHQVRVQFGL	IDGEEAAES....KK	.DE....VAQVDS..VNE	EEVTLDLGDELEI	380			
NTDB id 453 Spy49 1753c ACI62003.1	GEKIGQGS	ENAKRYLADHPQLF	DEIDRKVRVKFGL	LEESEEEESAMAVASE	E.....TDDL	ALDLNGIEI	376			
NTDB id 408 SMU RS09530 WP 002262392.1	GEKIGQGS	ENAKKFLADNPEIF	DDIDHKVRVQYGL	IEEDNTEEKQSSKEK	ETDEK..ADKN	LVLELDDTIEL	381			
NTDB id 115 BSU 16940 NP 389576.2	EERLGGG	RENAKQFLKENKD	IMLMIQEQIREHYGL	DNNGVVQQAEETQE	.EL.EFE.E.....		348			
NTDB id 625 LCA RS02525 WP 011374196.1	SERIGQGS	RENAKNYLADHEDVE	DEVRLKVRVRAAYG	ISDVPEEDLPTTEDE	..QI.NILPDDST....	EE.....	355			
NTDB id 1313 DR RS12030 WP 010888966.1	DERIGQGS	KEKTIAYIAERP	EMEQEIRDRVMAAIR	AGNAGEAPALAPAPA	AEPAEA.....		363			
NTDB id 1245 Cj1673c YP 002345041.1	DKKLGGG	RENSKAFLENPEI	ADEITKAIQNSMGI	EGMISGS..EDDEGE	E.....		343			
NTDB id 1214 NCTC11637 00359 SQJ03206.1	DKKLGGG	RENAKALLKEDKAL	ADEITLKI	KESIGSNEEIMPL..P	DEPLE....EM.....	E.....	347			
NTDB id 1211 C694 RS00795 WP 000963128.1	DKKLGGG	RENAKALLKEDKAL	ADEITLKI	KESIGSNEEIMPL..P	DEPLE....EM.....	E.....	347			
NTDB id 1334 RAOC RS04870 WP 004918236.1	DTKLGGG	RDITVKELIKDNPEL	AEELEAKIREKLQAK	.....			343			
NTDB id 1389 A4U84 RS07560 WP 021112712.1	GTKIGQGS	KNNAVKWLKENPEI	ADKLEQEIRNTLAS	NPNSVLK..ATASDS	NDES DV.....EEF	SEEEEL.....	372			
NTDB id 1130 NGFG RS03960 WP 003688695.1	GAKIGQGS	KDNVRVWLKENPEI	SDEIDAKIRALNGV	EMHITEG..TQD.....	ETD.....GERPEE	.....	348			
NTDB id 1124 NGFG RS03960 WP 003688695.1	GAKIGQGS	KDNVRVWLKENPEI	SDEIDAKIRALNGV	EMHITEG..TQD.....	ETD.....GERPEE	.....	348			
NTDB id 1123 OK783 RS03845 WP 003688695.1	GAKIGQGS	KDNVRVWLKENPEI	SDEIDAKIRALNGV	EMHITEG..TQD.....	ETD.....GERPEE	.....	348			
NTDB id 1427 RS RS02760 WP 011000510.1	GERIGQGS	RDNCREFLRENAEL	AREIENKVRHLGV	TPMGAVT..LAAEEVEE	D.....		352			
NTDB id 971239 WKC53 RS17290 WP 004237869.1	GEKIGQGS	KANATIYILKEHP	EMADELDKKLRELL	LNHSGEFST..AAES	FNEESET.....DAGN	EEF.....	356			
NTDB id 1165 A1552VC RS01565 WP 000344154.1	GDKIGQGS	KANACKYILKENPEI	AKTLDKKLREMLLN	PENMQLI..AETSSA	ADDVEF.....GAVP	EEF.....	354			
NTDB id 1142 GTF74 RS11550 WP 000344154.1	GDKIGQGS	KANACKYILKENPEI	AKTLDKKLREMLLN	PENMQLI..AETSSA	ADDVEF.....GAVP	EEF.....	354			
NTDB id 1205 PSJM300 05545 AFN77183.1	GSKIGQGS	KANAACKYLEENPEI	GIEQQIRAKLLV	TSANTKA..TPVAED	..LADA.....DI	.....	347			
NTDB id 1022 ACIAD RS06390 WP 004925639.1	GNKIGQGS	KNNVIRYLEENPQI	STEIEAVIREQLLT	KASDQTA..A.HDET	..EEEP.....DLLES	.....	349			
NTDB id 1074 ABD1 RS10195 WP 000344167.1	GNKIGQGS	KNNVIRYFEENNQIA	EEIERNIREQLLT	TGTNGAV..Q.I.ED	..EEEP.....DLLLL	ES.....	349			
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 499 SM12261 RS08315 WP 078228268.1	EIEE	384
NTDB id 527 SMSK321 RS11065 WP 001085454.1	EIEE	384
NTDB id 453 Spy49 1753c ACI62003.1	ED..	378
NTDB id 408 SMU RS09530 WP 002262392.1	ED..	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 971239 WKC53 RS17290 WP 004237869.1	....	356
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