

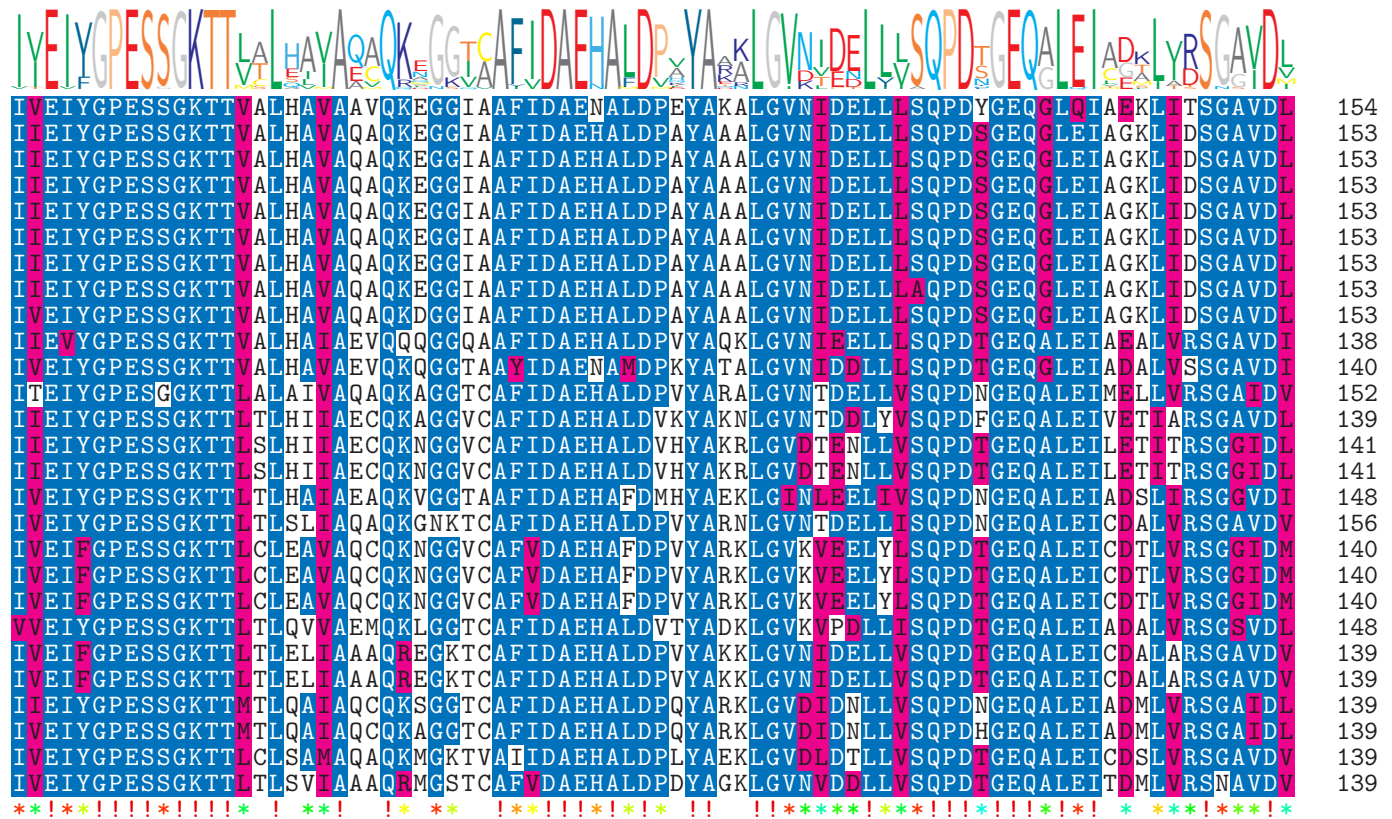
logo

NTDB id 600 KW2 RS01765 WP 011675413.1	MATKK....KTNFDDITKKYGA	ERDKALADALALIEKD	FGKGSIMRLGE	.AANQKVSVVSSGSLALD	I	ALGAGGYPKGR	74
NTDB id 269 KZH43 RS08665 WP 001085462.1	.MAKK....PKKLEEISKKFGA	EREKALNDALKLIEKD	FGKGSIMRLGE	.RAEQKVQVMSSGSLALD	I	ALGSGGYPKGR	73
NTDB id 228 SPD RS09265 WP 001085462.1	.MAKK....PKKLEEISKKFGA	EREKALNDALKLIEKD	FGKGSIMRLGE	.RAEQKVQVMSSGSLALD	I	ALGSGGYPKGR	73
NTDB id 194 SPR RS08825 WP 001085462.1	.MAKK....PKKLEEISKKFGA	EREKALNDALKLIEKD	FGKGSIMRLGE	.RAEQKVQVMSSGSLALD	I	ALGSGGYPKGR	73
NTDB id 159 SP RS09750 WP 001085462.1	.MAKK....PKKLEEISKKFGA	EREKALNDALKLIEKD	FGKGSIMRLGE	.RAEQKVQVMSSGSLALD	I	ALGSGGYPKGR	73
NTDB id 499 SM12261 RS08315 WP 078228268.1	.MAKK....PKKLDEISKKFGA	EREKALNDALKLIEKD	FGKGSIMRLGE	.RAEQKVQVMSSGSLALD	I	ALGSGGYPKGR	73
NTDB id 527 SMSK321 RS11065 WP 001085454.1	.MAKK....PKKLDEISKKFGA	EREKALNDALKLIEKD	FGKGSIMRLGE	.RAEQKVQVMSSGSLALD	I	ALGSGGYPKGR	73
NTDB id 453 Spy49 1753c ACI62003.1	.MAKK....LKKNEEITKKFGD	ERRKALDDALKNIEKD	FGKGAVMRLGE	.RAEQKVQVMSSGSLALD	I	ALGAGGYPKGR	73
NTDB id 408 SMU RS09530 WP 002262392.1	.MAKR.....IKKTEEITKKFGD	ERRKALDDALKNIEKD	FGKGAVMRLGE	.RAEQKVQVMSSGSLALD	I	ALGAGGYPKGR	73
NTDB id 115 BSU 16940 NP 389576.2	MS	DRQAALDMALKQIEKQ	FGKGSIMKLGE	.KTDTRISTVPSGSLALD	T	ALGIGGYPRGR	58
NTDB id 625 LCA RS02525 WP 011374196.1	MAKD	ERQAALDAALKKIEKN	FGKGSIMRMGE	.KVDTVQVSTVSSGSLAL	D	EALGVGGYPRGR	60
NTDB id 1313 DR RS12030 WP 010888966.1	MSKDATKEISAPTD	AKERSKATETAM	QIEKAFGKGSIMKLGA	.ESKLDVQVVSTGSLSLD	L	ALGVGGIPRGR	72
NTDB id 1245 Cj1673c YP 002345041.1	MDDN	KRKSLDAALKS	LDKTFGKGTILRLGD	.KEVEQIDSIGTGSVGLD	L	ALGIGGVPRGR	59
NTDB id 1211 C694 RS00795 WP 000963128.1	MAIDE	DKQKALISLAIKQID	KVFGKGALVRLGD	.KQVEKIDSISTGSLGLD	L	ALGIGGVPRGR	61
NTDB id 1214 NCTC11637 00359 SQJ03206.1	MAIDE	DKQKALISLAIKQID	KVFGKGALVRLGD	.KQVEKIDAISTGSLGLD	L	ALGIGGVPRGR	61
NTDB id 1334 RAOC RS04870 WP 004918236.1	MAKT..ETTSPND	DKKKALAAVLEK	LDKTYGKGTVMKLG	DGTVDHNIIEVIPS	GSLGLD	LALGVGGYPRGR	68
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.MAENKKSSKNNTV..VKQVEPE	QKKQALEAALA	QIEKQFGKGSIMKLQ	.TEQLDIESVSTGSLGLD	L	ALGIGGLPMGR	76
NTDB id 1130 NGFG RS03960 WP 003688695.1	MSD	DKSKALAAALA	QIEKSFGKGAIMKMDGS	QQUEENLEVISTGSLGLD	L	ALGVGGLPRGR	60
NTDB id 1124 NGFG RS03960 WP 003688695.1	MSD	DKSKALAAALA	QIEKSFGKGAIMKMDGS	QQUEENLEVISTGSLGLD	L	ALGVGGLPRGR	60
NTDB id 1123 OK783 RS03845 WP 003688695.1	MSD	DKSKALAAALA	QIEKSFGKGAIMKMDGS	QQUEENLEVISTGSLGLD	L	ALGVGGLPRGR	60
NTDB id 1427 RS RS02760 WP 011000510.1	.MEDG.....K..KAASMSA	EKQKALAAALA	QIEKQFGKGSIMKMG	D.AEVEPVQVVSTGSLGLD	V	ALGVGGLPRGR	68
NTDB id 1165 A1552VC RS01565 WP 000344154.1	MDEN	KQKALAAALG	QIEKQFGKGSIMRLGD	.NRAMDVETISTGSLSLD	I	ALGAGGLPMGR	59
NTDB id 1142 GTF74 RS11550 WP 000344154.1	MDEN	KQKALAAALG	QIEKQFGKGSIMRLGD	.NRAMDVETISTGSLSLD	I	ALGAGGLPMGR	59
NTDB id 1074 ABD1 RS10195 WP 000344167.1	MDEN	KSKALQAALS	QIEKQFGKNTVMRLGD	.NTVQAVEAVSTGSLTLD	I	ALGIGGLPKGR	59
NTDB id 1022 ACIAD RS06390 WP 004925639.1	MDDN	KSKALQAALS	QIEKQFGKNTVMRLGD	.NTVQAVEAVSTGSLTLD	I	ALGIGGLPKGR	59
NTDB id 394978 GAY96 RS10840 WP 228345025.1	MDAN	KQKALDAALS	QIERQFGKGAIMKMGE	.QPREAIPAISTGSLGLD	I	ALGIGGLPMGR	59
NTDB id 1205 PSJM300 05545 AFN77183.1	MDEN	KKRALAAALG	QIEKQFGKGAVMRMGD	.HDRQAIPSISTGSLGLD	I	ALGIGGLPKGR	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 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 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 011000511.1
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 394978 GAY96 RS10840 WP 228345025.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

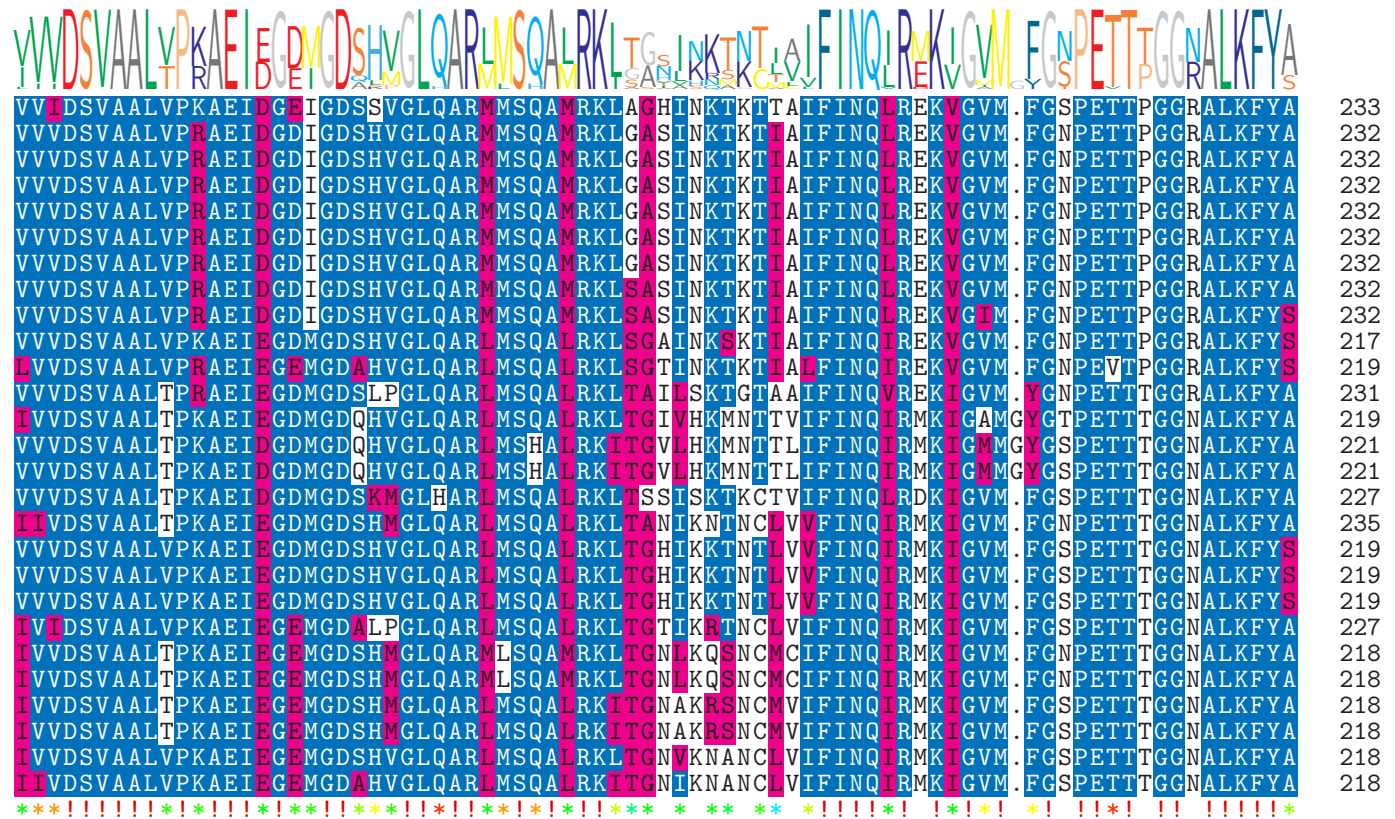
```



```

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 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 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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 394978 GAY96 RS10840 WP 228345025.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

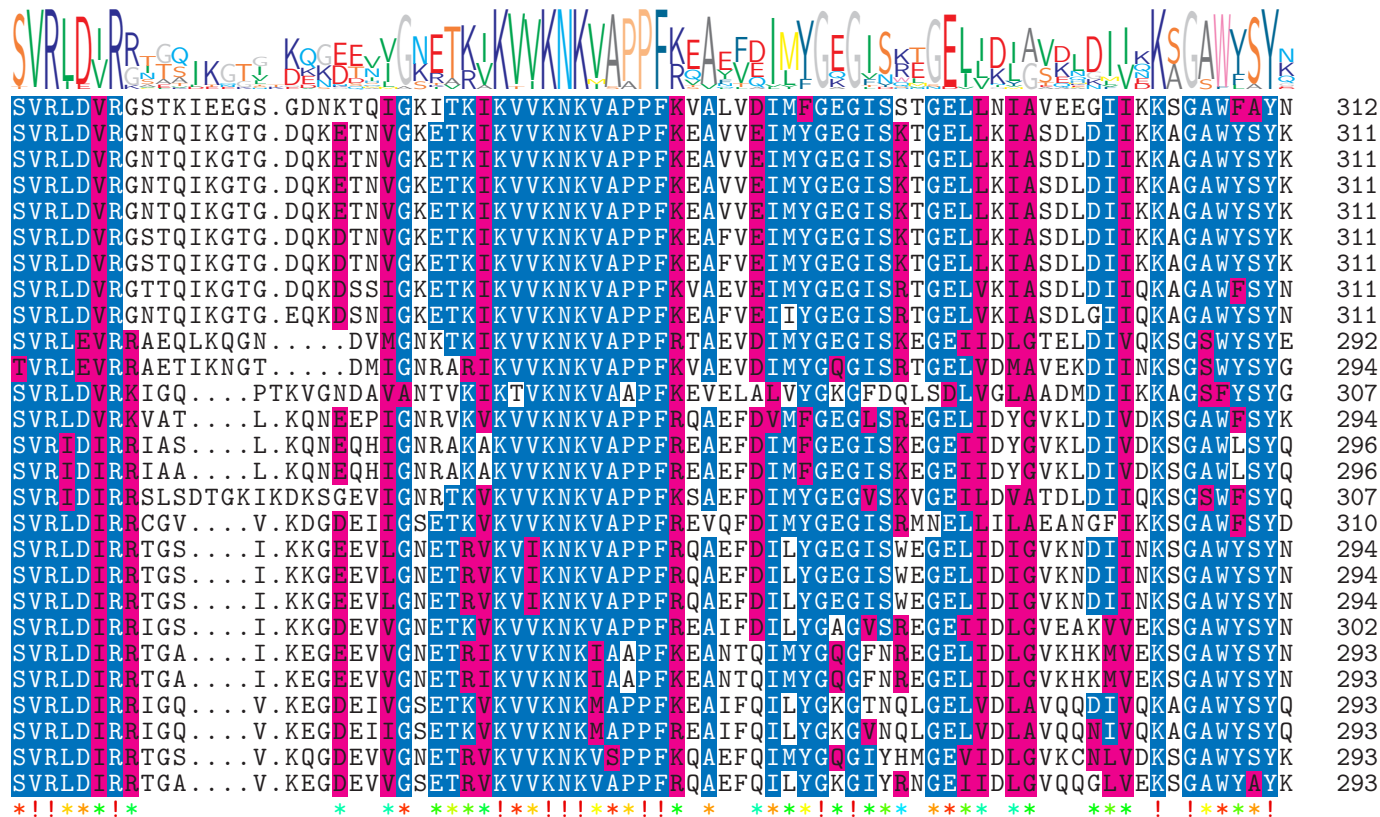
```



```

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 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 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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 394978 GAY96 RS10840 WP 228345025.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

```



logo

NTDB id 600 KW2 RS01765 WP 011675413.1	DEKIGQGA	EKAKNYLKEHQDV	DEIDHKVRAAHGL	LDDSEVAETEEETT	ASKTKAKAKKE	EKAVETEEIELELED	....	387	
NTDB id 269 KZH43 RS08665 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKKD	E....PKKEEA	.VNEEVPLDLGDELEIE		385	
NTDB id 228 SPD RS09265 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKKD	E....PKKEEA	.VNEEVPLDLGDELEIE		385	
NTDB id 194 SPR RS08825 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKKD	E....PKKEEA	.VNEEVPLDLGDELEIE		385	
NTDB id 159 SP RS09750 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKKD	E....PKKEEA	.VNEEVPLDLGDELEIE		385	
NTDB id 499 SM12261 RS08315 WP 078228268.1	DEKIGQGS	ENAKKYLAADNPEIF	DEIDHQVRVQFGL	IDGEEIAES....KKD	E....AAQVDS	.VNEEVTLDLGDELEIE		381	
NTDB id 527 SMSK321 RS11065 WP 001085454.1	DEKIGQGS	ENAKKYLAADNPEVFAE	IDHQVRVQFGL	IDGEEAAES....KKD	E....VAQVDS	.VNEEVTLDLGDELEIE		381	
NTDB id 453 Spy49 1753c ACI62003.1	GEKIGQGS	ENAKRYLADHPQLF	DEIDRKVRVKFGL	LEESEEEESAMAVASE	E.....	TDDLALDLNNGIEIE		377	
NTDB id 408 SMU RS09530 WP 002262392.1	GEKIGQGS	ENAKKFLADNPEIF	DDIDHKVRVQYGL	IEEDNTEEKQSSKEK	ETDEK	.ADKNLVLELDDTIELE		382	
NTDB id 115 BSU 16940 NP 389576.2	EERLGQGR	ENAKQFLKENKDIMLMI	QEQIREHYGL	DNNGVVQQAEETQEEL	EFE.E.....	.....		348	
NTDB id 625 LCA RS02525 WP 011374196.1	SERIGQGR	ENAKNYLADHEDVE	DEVRLKVRAAYG	ISDVPPEEDLPTTEDE	.QI.NILPD	DST.....EE.....		355	
NTDB id 1313 DR RS12030 WP 010888966.1	DERIGQG	KEKTIAIYAERP	EMEQEIRDRVMAAIR	AGNAGEAPALAPAPA	APAE.....AAEA	.....		363	
NTDB id 1245 Cj1673c YP 002345041.1	DKKLGGQ	RENSKAFLENPEIA	DEITKAIQNSMG	IEGMISGSED..DEG	..E.....E.....	.....		343	
NTDB id 1211 C694 RS00795 WP 000963128.1	DKKLGGQ	RENAKALLKEDKALA	DEITLKI	KESIGSNEEIMPLPD	.EPL..E.....	EME.....		347	
NTDB id 1214 NCTC11637 00359 SQJ03206.1	DKKLGGQ	RENAKALLKEDKALA	DEITLKI	KESIGSNEEIMPLPD	.EPL..E.....	EME.....		347	
NTDB id 1334 RAOC RS04870 WP 004918236.1	DTKLGGQ	RDTVKELIKDNPE	LAELEAKIREKLQAK	.....	.....	.....		343	
NTDB id 1389 A4U84 RS07560 WP 021112712.1	GTKIGQG	KNNAVKWLKENPEI	ADKLEQEI	RNTLASNPNSVLKAT	..ASDSND	ESDVEEFSEEL		372	
NTDB id 1130 NGFG RS03960 WP 003688695.1	GAKIGQG	KDNVRVWLKENPEI	SDEIDAKIRALNG	VEMHITEGTQ.....	D.....ET	.DGERPEE.....		348	
NTDB id 1124 NGFG RS03960 WP 003688695.1	GAKIGQG	KDNVRVWLKENPEI	SDEIDAKIRALNG	VEMHITEGTQ.....	D.....ET	.DGERPEE.....		348	
NTDB id 1123 OK783 RS03845 WP 003688695.1	GAKIGQG	KDNVRVWLKENPEI	SDEIDAKIRALNG	VEMHITEGTQ.....	D.....ET	.DGERPEE.....		348	
NTDB id 1427 RS RS02760 WP 011000510.1	GERIGQGR	DNCREFLRENAEL	AREIENKVR	REHLGVTPMGAVTLA	.E.....EVEED	.....		352	
NTDB id 1165 A1552VC RS01565 WP 000344154.1	GDKIGQG	KANACKYLKENPEI	AKTLDKKLREMLLN	PENMQLIAE..TSSAAD	DVEFGAVPEEF	.....		354	
NTDB id 1142 GTF74 RS11550 WP 000344154.1	GDKIGQG	KANACKYLKENPEI	AKTLDKKLREMLLN	PENMQLIAE..TSSAAD	DVEFGAVPEEF	.....		354	
NTDB id 1074 ABD1 RS10195 WP 000344167.1	GNKIGQG	KNNVIRYFEENNQIA	EEIERNIREQLLT	TGTNGAVQI...E...D	EEEPDLLLES	.....		349	
NTDB id 1022 ACIAD RS06390 WP 004925639.1	GNKIGQG	KNNVIRYLEENPQI	STEIEAVIREQLLT	KASDQTAAH..DE...T	EEEPDLLLES	.....		349	
NTDB id 394978 GAY96 RS10840 WP 228345025.1	GDKIGQG	KANAAQYLEEHKEL	AKEIEDQIRAQLLT	VQVKGGDIE..SV.VDE	EAEA	.....		346	
NTDB id 1205 PSJM300 05545 AFN77183.1	GSKIGQG	KANAAYLEENPEI	GQIEIEQQIRAKLL	VTSANTKAT...PV.AED	LADADI	.....		347	
consensus	***!!!	*****	**	*	***	*****	**	*	*

logo

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 499 SM12261 RS08315 WP 078228268.1	IEE	384
NTDB id 527 SMSK321 RS11065 WP 001085454.1	IEE	384
NTDB id 453 Spy49 1753c ACI62003.1	D..	378
NTDB id 408 SMU RS09530 WP 002262392.1	D..	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 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 1074 ABD1 RS10195 WP 000344167.1	...	349
NTDB id 1022 ACIAD RS06390 WP 004925639.1	...	349
NTDB id 394978 GAY96 RS10840 WP 228345025.1	...	346
NTDB id 1205 PSJM300 05545 AFN77183.1	...	347

consensus

 non conserved
 similar
 ≥ 50% conserved