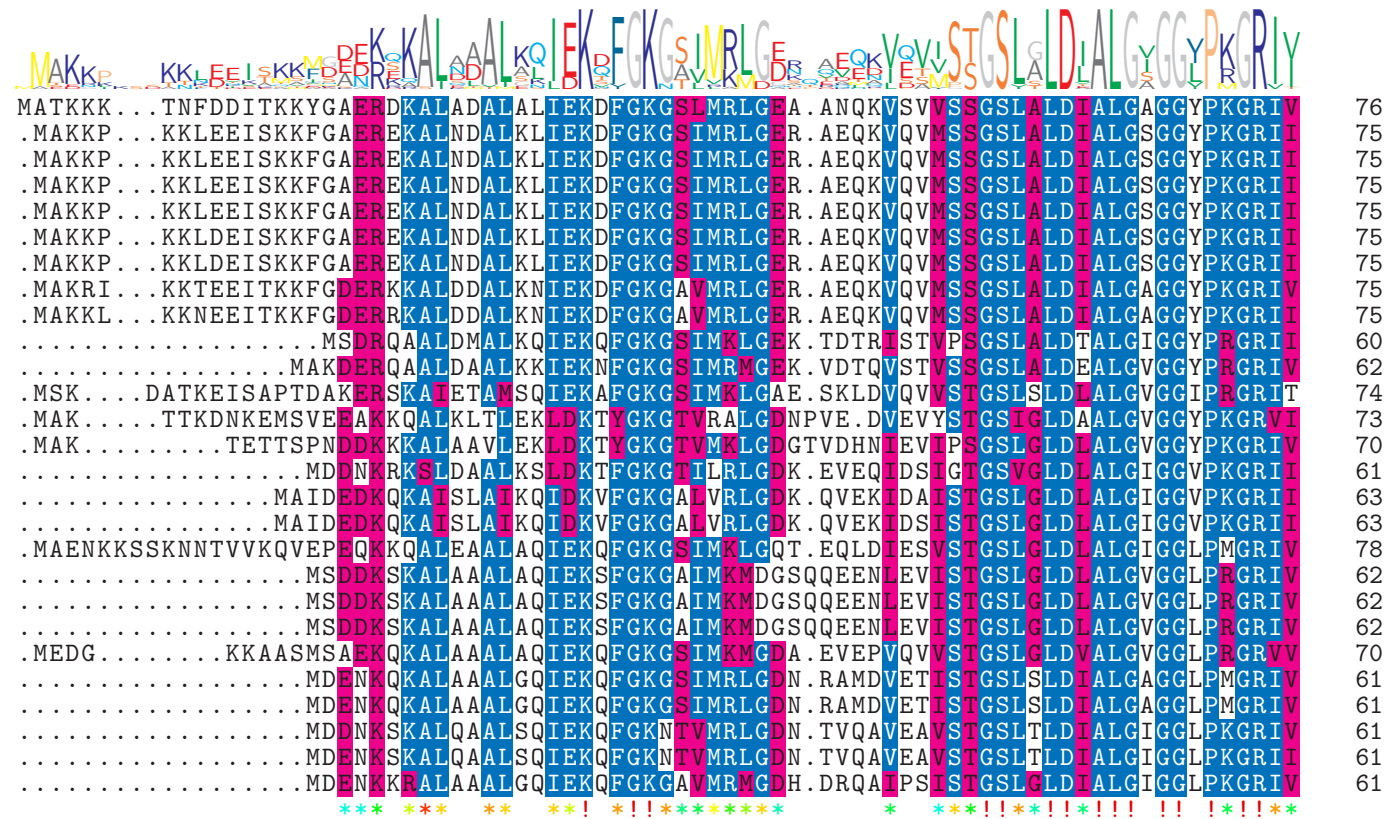


```

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 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 35060 COCH RS04060 WP 015782044.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 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

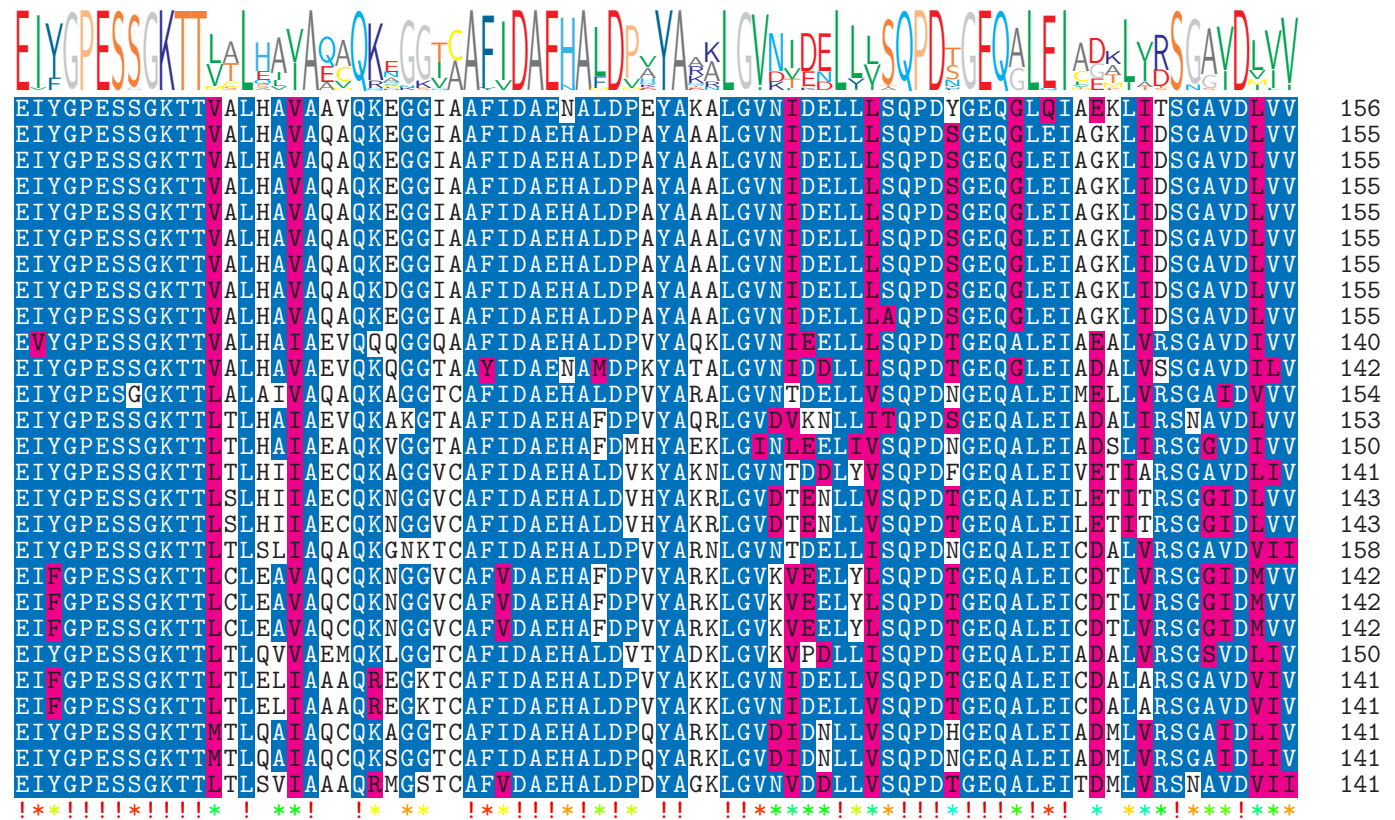
```



```

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 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
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 35060 COCH RS04060 WP 015782044.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 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

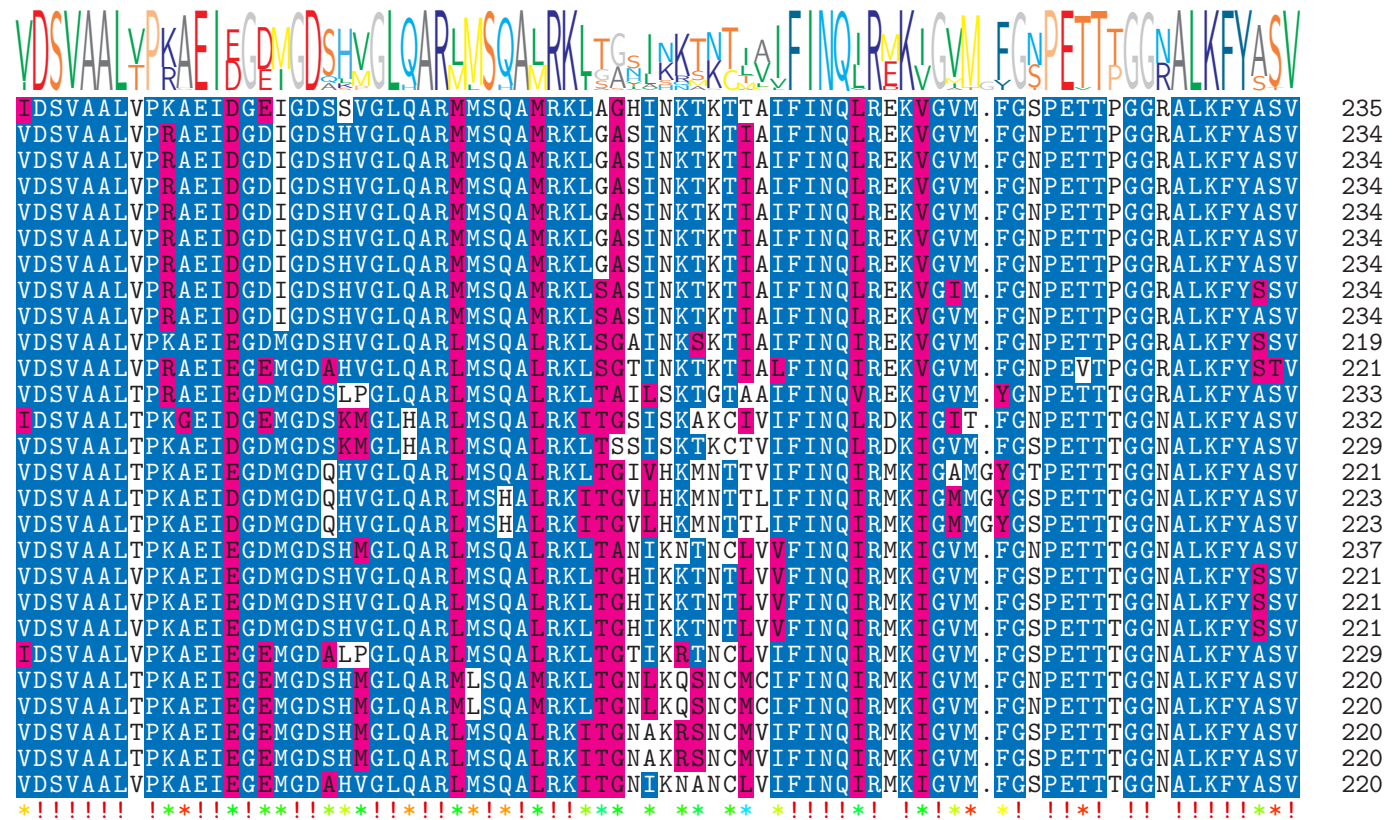
```



```

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 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
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 35060 COCH RS04060 WP 015782044.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 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	RLDVRGSTKIEEGS...GDNKTQIGK	ITKIKVVKNKVAPPFKVALVDIMFGEGISSTGELINIAVEEGI	IKKSGAWFAYN	312	
NTDB id 269 KZH43 RS08665 WP 001085462.1	RLDVRGNTQIKGTG...DQKETN	VGKETKIKVVKNKVAPPFKEAVVEIMYEGEGISKTGELLKIASDLDI	IKKAGAWYSYK	311	
NTDB id 228 SPD RS09265 WP 001085462.1	RLDVRGNTQIKGTG...DQKETN	VGKETKIKVVKNKVAPPFKEAVVEIMYEGEGISKTGELLKIASDLDI	IKKAGAWYSYK	311	
NTDB id 194 SPR RS08825 WP 001085462.1	RLDVRGNTQIKGTG...DQKETN	VGKETKIKVVKNKVAPPFKEAVVEIMYEGEGISKTGELLKIASDLDI	IKKAGAWYSYK	311	
NTDB id 159 SP RS09750 WP 001085462.1	RLDVRGNTQIKGTG...DQKETN	VGKETKIKVVKNKVAPPFKEAVVEIMYEGEGISKTGELLKIASDLDI	IKKAGAWYSYK	311	
NTDB id 499 SM12261 RS08315 WP 078228268.1	RLDVRGSTQIKGTG...DQKDTN	VGKETKIKVVKNKVAPPFKEAFVEIMYEGEGISKTGELLKIASDLDI	IKKAGAWYSYK	311	
NTDB id 527 SMSK321 RS11065 WP 001085454.1	RLDVRGSTQIKGTG...DQKDTN	VGKETKIKVVKNKVAPPFKEAFVEIMYEGEGISKTGELLKIASDLDI	IKKAGAWYSYK	311	
NTDB id 408 SMU RS09530 WP 002262392.1	RLDVRGNTQIKGTG...EQKDSN	IGKETKIKVVKNKVAPPFKEAFVEIITYGEGISRTGELVKIASDLGI	IQKAGAWYSYN	311	
NTDB id 453 Spy49 1753c ACI62003.1	RLDVRGTTQIKGTG...DQKDSS	IGKETKIKVVKNKVAPPFKEAFVEIMYEGEGISRTGELVKIASDLDI	IQKAGAWFSYN	311	
NTDB id 115 BSU 16940 NP 389576.2	RLEVRRAEQLKQGN.....DVMGNKTKIKVVKNKVAPPFR	TAEVDIMYEGEGISKEGEIIDLGTELDIDVQKSGSWYSYE		292	
NTDB id 625 LCA RS02525 WP 011374196.1	RLEVRRAEETIKNGT.....DMIGNRARIKVVKNKVAPPFK	VAEVDIMYGGGISRTGELVDMAVEKDIINKSGSWYSYG		294	
NTDB id 1313 DR RS12030 WP 010888966.1	RLDVRKIGQPT.....KVGND	AVANTVKIKTVKNKVAAPFKEVELALVYGKGFQDLS	DLVGLAADMDI	IKKAGSFYSYG	307
NTDB id 35060 COCH RS04060 WP 015782044.1	RIDIRKDGGPQGSAAIKDSNGEI	IGNKTKVKIKVNKVASPFKTATFDIMFGLGISKS	AELLELGVEADIVDKSGAFYSYK	312	
NTDB id 1334 RAOC RS04870 WP 004918236.1	RIDIRRSLSDT..GKIKDKSGEV	IGNRTKVKVVKNKVAPPFKSAEFDIMYEGGVSKVGEILD	VATDLDI	IQKSGSWFSYQ	307
NTDB id 1245 Cj1673c YP 002345041.1	RLDVRKVATL.....KQNEEP	IGNRVKVKVVKNKVAPPFRQAEFDVMFGEGLSREGELIDYGVKLD	DIVDKSGAWFSYK	294	
NTDB id 1214 NCTC11637 00359 SQJ03206.1	RIDIRRIAAL.....KQNEQH	IGNRAKAKVVKNKVAPPFREAEFDIMFGEGISKEGEI	IDYGVKLDIVDKSGAWLSYQ	296	
NTDB id 1211 C694 RS00795 WP 000963128.1	RIDIRRIASL.....KQNEQH	IGNRAKAKVVKNKVAPPFREAEFDIMFGEGISKEGEI	IDYGVKLDIVDKSGAWLSYQ	296	
NTDB id 1389 A4U84 RS07560 WP 021112712.1	RLDIRRCGVV.....KDGDEI	IGSETKVKVVKNKVAPPFREVQFDIMYEGEGISRMNELL	ILAEANGFI	IKKSGAWFSYD	310
NTDB id 1130 NGFG RS03960 WP 003688695.1	RLDIRRTGSI.....KKGEEV	LGNETRVKVIKNKVAPPFRQAEFDILYEGEGISWEGELID	IGVKNDI	INKSGAWYSYN	294
NTDB id 1124 NGFG RS03960 WP 003688695.1	RLDIRRTGSI.....KKGEEV	LGNETRVKVIKNKVAPPFRQAEFDILYEGEGISWEGELID	IGVKNDI	INKSGAWYSYN	294
NTDB id 1123 OK783 RS03845 WP 003688695.1	RLDIRRTGSI.....KKGEEV	LGNETRVKVIKNKVAPPFRQAEFDILYEGEGISWEGELID	IGVKNDI	INKSGAWYSYN	294
NTDB id 1427 RS RS02760 WP 011000510.1	RLDIRRIGSI.....KKGDEV	VGNETKVKVVKNKVAPPFREAI	FDILYGAGVSREGEIIDLGV	EAKVVEKSGAWYSYN	302
NTDB id 1165 A1552VC RS01565 WP 000344154.1	RLDIRRTGAI.....KEGEEV	VGNETRIKVVKNKIAAPFKEANTQIMYGGGFNREGELID	LGVKHKMVEKSGAWYSYN	293	
NTDB id 1142 GTF74 RS11550 WP 000344154.1	RLDIRRTGAI.....KEGEEV	VGNETRIKVVKNKIAAPFKEANTQIMYGGGFNREGELID	LGVKHKMVEKSGAWYSYN	293	
NTDB id 1022 ACIAD RS06390 WP 004925639.1	RLDIRRIGQV.....KEGDEI	IGSETKVKVVKNKMAPPFREAI	FIQILYGKGVNQLGELVDLAVQQ	NIVQKAGAWYSYQ	293
NTDB id 1074 ABD1 RS10195 WP 000344167.1	RLDIRRIGQV.....KEGDEI	VGSETKVKVVKNKMAPPFKEAI	FIQILYGKGTNQLGELVDLAVQQ	DIVQKAGAWYSYQ	293
NTDB id 1205 PSJM300 05545 AFN77183.1	RLDIRRTGAV.....KEGDEV	VGSETRVKVVKNKVAPPFRQAEFQILYGKGIYRN	GEIIDLGVVQQGLVEKSGAWYAYK		293
consensus	!***!* *	* ** *****!*****!*****!*	* *****!*!*** ***** **	*** ! !*****!	

logo

NTDB id 600 KW2 RS01765 WP 011675413.1	DEKIGQGA	EKAKNYLKEHQDV	DEIDHKVRAAHG	LDDSEVAETEEETT	ASKTKAKAKKEE	EKAVETEEIE...	LELED..	387		
NTDB id 269 KZH43 RS08665 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKKDE...	PKKEEA..	VNEEVP...	LDLGDEL	382		
NTDB id 228 SPD RS09265 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKKDE...	PKKEEA..	VNEEVP...	LDLGDEL	382		
NTDB id 194 SPR RS08825 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKKDE...	PKKEEA..	VNEEVP...	LDLGDEL	382		
NTDB id 159 SP RS09750 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKKDE...	PKKEEA..	VNEEVP...	LDLGDEL	382		
NTDB id 499 SM12261 RS08315 WP 078228268.1	DEKIGQGS	ENAKKYLAADNPEIF	DEIDHQVRVQFGL	IDGEEIAES...	KKDE...	AAQVDS..	VNEEVT...LDLGDEL	378		
NTDB id 527 SMSK321 RS11065 WP 001085454.1	DEKIGQGS	ENAKKYLAADNPEV	FAEIDHQVRVQFGL	IDGEEAAES...	KKDE...	VAQVDS..	VNEEVT...LDLGDEL	378		
NTDB id 408 SMU RS09530 WP 002262392.1	GEKIGQGS	ENAKKFLADNPEIF	DDIDHKVVRVQYGL	IEEDNTEEEKQSSKEK.....	ETDEK..	ADKNLV...	LELDDTI	379		
NTDB id 453 Spy49 1753c ACI62003.1	GEKIGQGS	ENAKRYLADHPQLF	DEIDRKVRVKFGL	LEESEEEESAMAVASE.....	E.....	TDDLA...	LDLDNGI	374		
NTDB id 115 BSU 16940 NP 389576.2	EERLGGGR	ENAKQFLKENKDIM	LMIQEQIREHYGL	DNNGVVQQAEETQEEL	EFE.E.....			348		
NTDB id 625 LCA RS02525 WP 011374196.1	SERIGQGR	ENAKNYLADHEDVE	DEVRLKVRAAYG	ISDVPPEEDLPTTEDE.QI.NILP	DDST.....	EE.....		355		
NTDB id 1313 DR RS12030 WP 010888966.1	DERIGQG	KEKTIA	YIAERP	MEQEIRDRVMAAIRAGNAGEA	PALAPAPAAP.....	EAAEA.....		363		
NTDB id 35060 COCH RS04060 WP 015782044.1	GT	RLGGGR	DA	SIAM	LN	DNPEIAEQIEVEL	REWLKHNELSSNP	KKG..KKST.....KAKDKKVV	PEYSEEEYDEADTY	384
NTDB id 1334 RAO RS04870 WP 004918236.1	DT	KLGGGR	DTV	KEL	IK	DNPEIAE	ELEAKIREKLQAK.....			343
NTDB id 1245 Cj1673c YP 002345041.1	DKKL	GQGR	ENSKA	FLKENPEIADEIT	KA	IQNSMG	TEGMISGSEDD..E..G.....	EE.....		343
NTDB id 1214 NCTC11637 00359 SQJ03206.1	DKKL	GQGR	ENAKALLKEDKAL	ADEITLKIKESIGS	NEEIMPLPDE..P..L.....	EEME.....				347
NTDB id 1211 C694 RS00795 WP 000963128.1	DKKL	GQGR	ENAKALLKEDKAL	ADEITLKIKESIGS	NEEIMPLPDE..P..L.....	EEME.....				347
NTDB id 1389 A4U84 RS07560 WP 021112712.1	GT	KIGQG	KNNAVKWLKENPEIA	DKLEQEIRNTLAS	NPNSVLKATA..SDSN.....	DESDV....EEFSEEL.....				372
NTDB id 1130 NGFG RS03960 WP 003688695.1	GAKIGQG	KDNVRVWLKENPEIS	DEIDAKIRALNGVEM	HITTEGTQD..ETDG.....	ER.....	PEE.....				348
NTDB id 1124 NGFG RS03960 WP 003688695.1	GAKIGQG	KDNVRVWLKENPEIS	DEIDAKIRALNGVEM	HITTEGTQD..ETDG.....	ER.....	PEE.....				348
NTDB id 1123 OK783 RS03845 WP 003688695.1	GAKIGQG	KDNVRVWLKENPEIS	DEIDAKIRALNGVEM	HITTEGTQD..ETDG.....	ER.....	PEE.....				348
NTDB id 1427 RS RS02760 WP 011000510.1	GERIGQGR	DNCREFLRENAELARE	EIENKVREHLGV	TPMGAVTLA...EEVE.....	ED.....					352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	GD	KIGQG	KANACKY	LKENPEIAKTLDK	KLREMLLNPENMQLIAET..SSAA.....	DDVEF....GAVPEEF.....				354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	GD	KIGQG	KANACKY	LKENPEIAKTLDK	KLREMLLNPENMQLIAET..SSAA.....	DDVEF....GAVPEEF.....				354
NTDB id 1022 ACIAD RS06390 WP 004925639.1	GNKIGQG	KNNVIRY	LEENPQISTE	IEAVIREQLLTKASD	QTAH..DETE.....	EEDL....L..ES.....				349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	GNKIGQG	KNNVIRY	FEENNQIAE	EIERNIREQLLTTGT	NGAVQ.I...EDE.....	EEDL....L..LES.....				349
NTDB id 1205 PSJM300 05545 AFN77183.1	GS	KIGQG	KANA	AKYLEENPEIGQ	EIEQQIRAKLLV	TSANTKATPV..AEDL.....	ADADI.....			347
consensus		***!!!*****	**	*****	*****	**	**		*	*

logo

		EIEIEE	
NTDB id 600 KW2 RS01765 WP 011675413.1	.....		387
NTDB id 269 KZH43 RS08665 WP 001085462.1	EIEIEE		388
NTDB id 228 SPD RS09265 WP 001085462.1	EIEIEE		388
NTDB id 194 SPR RS08825 WP 001085462.1	EIEIEE		388
NTDB id 159 SP RS09750 WP 001085462.1	EIEIEE		388
NTDB id 499 SM12261 RS08315 WP 078228268.1	EIEIEE		384
NTDB id 527 SMSK321 RS11065 WP 001085454.1	EIEIEE		384
NTDB id 408 SMU RS09530 WP 002262392.1	ELED..		383
NTDB id 453 Spy49 1753c ACI62003.1	EIED..		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 35060 COCH RS04060 WP 015782044.1	DEEDD.		389
NTDB id 1334 RAOC RS04870 WP 004918236.1	.....		343
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 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