

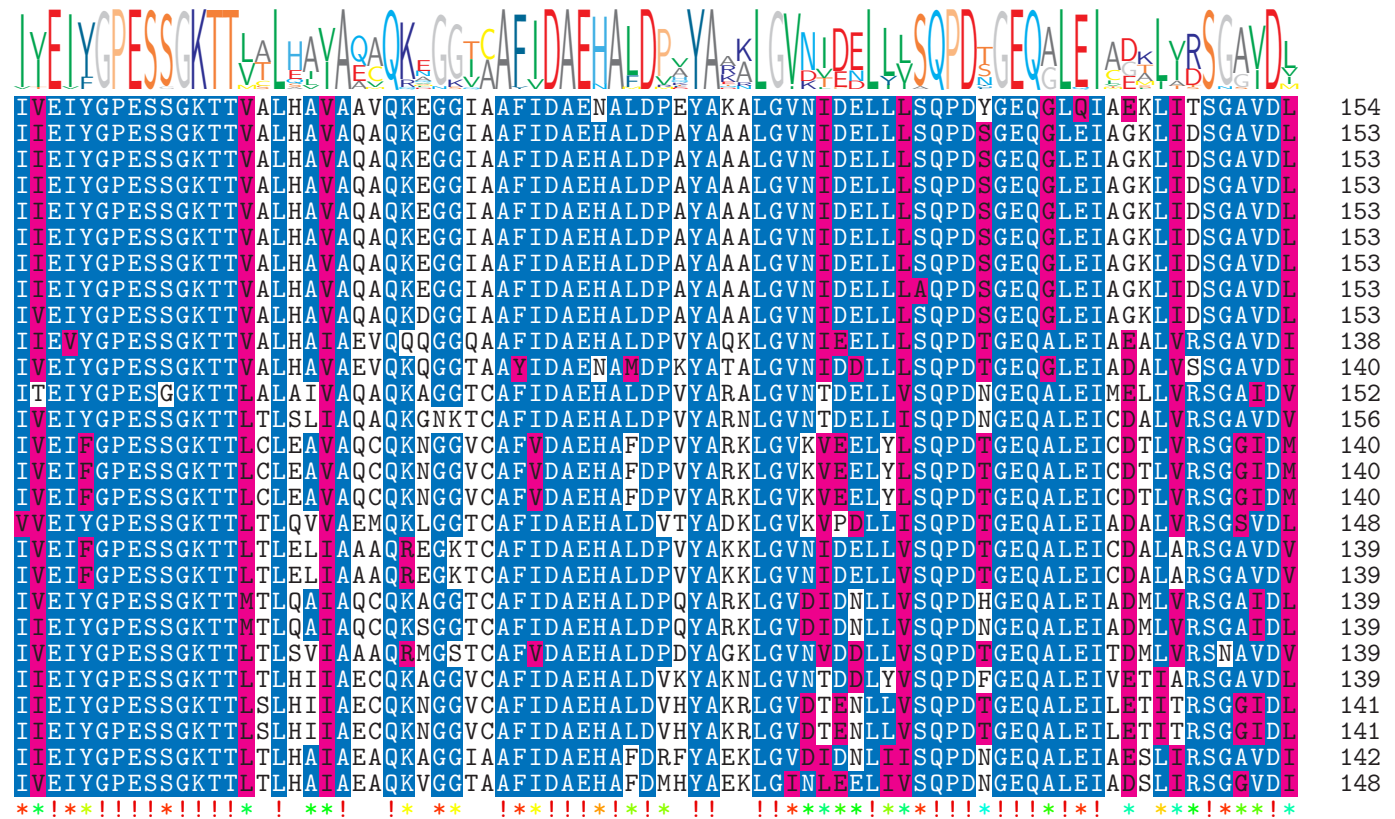
logo

NTDB id 600 KW2 RS01765 WP 011675413.1	MATKKKT.....NFDDITKKYGA	ERD	KALADALAL	IEKD	FGKGSIMRLGE	A	ANQKVS	VSS	GSLALD	I	ALGAGGY	PKGR	74
NTDB id 269 KZH43 RS08665 WP 001085462.1	.MAKKPK.....KLEEISKKFGA	ERE	KALNDALKL	IEKD	FGKGSIMRLGER	.AE	QKVQVM	SS	GSLALD	I	ALGSGGY	PKGR	73
NTDB id 228 SPD RS09265 WP 001085462.1	.MAKKPK.....KLEEISKKFGA	ERE	KALNDALKL	IEKD	FGKGSIMRLGER	.AE	QKVQVM	SS	GSLALD	I	ALGSGGY	PKGR	73
NTDB id 194 SPR RS08825 WP 001085462.1	.MAKKPK.....KLEEISKKFGA	ERE	KALNDALKL	IEKD	FGKGSIMRLGER	.AE	QKVQVM	SS	GSLALD	I	ALGSGGY	PKGR	73
NTDB id 159 SP RS09750 WP 001085462.1	.MAKKPK.....KLEEISKKFGA	ERE	KALNDALKL	IEKD	FGKGSIMRLGER	.AE	QKVQVM	SS	GSLALD	I	ALGSGGY	PKGR	73
NTDB id 499 SM12261 RS08315 WP 078228268.1	.MAKKPK.....KLDEISKKFGA	ERE	KALNDALKL	IEKD	FGKGSIMRLGER	.AE	QKVQVM	SS	GSLALD	I	ALGSGGY	PKGR	73
NTDB id 527 SMSK321 RS11065 WP 001085454.1	.MAKKPK.....KLDEISKKFGA	ERE	KALNDALKL	IEKD	FGKGSIMRLGER	.AE	QKVQVM	SS	GSLALD	I	ALGSGGY	PKGR	73
NTDB id 453 Spy49 1753c ACI62003.1	.MAKKLK.....KNEEITKKFG	DERR	KALDDALKN	IEKD	FGKGAVMRLGER	.AE	QKVQVM	SS	GSLALD	I	ALGAGGY	PKGR	73
NTDB id 408 SMU RS09530 WP 002262392.1	.MAKRIK.....KTEEITKKFG	DERK	KALDDALKN	IEKD	FGKGAVMRLGER	.AE	QKVQVM	SS	GSLALD	I	ALGAGGY	PKGR	73
NTDB id 115 BSU 16940 NP 389576.2	MSDRQAALDMALKQ	IEKQ	FGKGSIMKLGEK	K	TDTR	ISTVP	SGSLALD	I	TALGIGGY	PRGR		58	
NTDB id 625 LCA RS02525 WP 011374196.1	MAKDERQAALDAALKK	IEKN	FGKGSIMRMGEK	V	DTQV	STVSS	GSLALDE	ALGVGGY	PRGR		60		
NTDB id 1313 DR RS12030 WP 010888966.1	MSKDATKEISAPTDAKERSKAT	ETAM	SQIEKA	FGKGSIMKLGAE	.SK	LDVQVV	STGSLSLD	I	ALGVGGI	PRGR		72	
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.MAENKKSSKNNTVV..KQVEPE	QKKQ	ALEAAL	IEKQ	FGKGSIMKLGQT	.E	QLDIES	VSTGSLGLD	I	ALGIGGL	PMGR	76	
NTDB id 1130 NGFG RS03960 WP 003688695.1	MSDDKSKALAAAL	IEKS	FGKGAIMKMDGSQ	EEN	LEV	ISTGSLGLD	I	ALGVGGL	PRGR		60		
NTDB id 1124 NGFG RS03960 WP 003688695.1	MSDDKSKALAAAL	IEKS	FGKGAIMKMDGSQ	EEN	LEV	ISTGSLGLD	I	ALGVGGL	PRGR		60		
NTDB id 1123 OK783 RS03845 WP 003688695.1	MSDDKSKALAAAL	IEKS	FGKGAIMKMDGSQ	EEN	LEV	ISTGSLGLD	I	ALGVGGL	PRGR		60		
NTDB id 1427 RS RS02760 WP 011000510.1	.MEDG.....KK..AASMSAE	KQKALAAAL	IEKQ	FGKGSIMKMGDA	.E	VEPVQV	STGSLGLD	I	ALGVGGL	PRGR		68	
NTDB id 1165 A1552VC RS01565 WP 000344154.1	MDENKQKALAAAL	GQIEKQ	FGKGSIMRLGDN	.RAM	DVET	ISTGSLSLD	I	ALGAGGL	PMGR		59		
NTDB id 1142 GTF74 RS11550 WP 000344154.1	MDENKQKALAAAL	GQIEKQ	FGKGSIMRLGDN	.RAM	DVET	ISTGSLSLD	I	ALGAGGL	PMGR		59		
NTDB id 1022 ACIAD RS06390 WP 004925639.1	MDDNKSKALQAALS	SQIEKQ	FGKNTVMRLGDN	.TV	QAVEAV	STGSLTLD	I	ALGIGGL	PKGR		59		
NTDB id 1074 ABD1 RS10195 WP 000344167.1	MDENKSKALQAALS	SQIEKQ	FGKNTVMRLGDN	.TV	QAVEAV	STGSLTLD	I	ALGIGGL	PKGR		59		
NTDB id 1205 PSJM300 05545 AFN77183.1	MDENKKRALAAAL	GQIEKQ	FGKGAVMRMGDH	.DR	QAIP	ISTGSLGLD	I	ALGIGGL	PKGR		59		
NTDB id 1245 Cj1673c YP 002345041.1	MDDNKRKSLDAALKS	LDKT	FGKGTILRLGDK	VE	.Q	IDS	IGTGSVGLD	I	ALGIGGV	PKGR		59	
NTDB id 1211 C694 RS00795 WP 000963128.1	MAIDEDKQKALISLA	IKQID	KVFGKGALVRLGDK	QVE	.K	IDS	ISTGSLGLD	I	ALGIGGV	PKGR		61	
NTDB id 1214 NCTC11637 00359 SQJ03206.1	MAIDEDKQKALISLA	IKQID	KVFGKGALVRLGDK	QVE	.K	IDA	ISTGSLGLD	I	ALGIGGV	PKGR		61	
NTDB id 393141 GCU34 RS10145 WP 072782511.1	MSSDKEAKLKALQLTLDK	LDKT	YGKGTVMKMGD	SAVE	.E	VET	ISSGSLGLD	I	ALGVNGY	PKGR		62	
NTDB id 1334 RAOC RS04870 WP 004918236.1	MAKTE..TTSPNDDKKKALAAV	LEKLD	KTYGKGTVMKLG	GTVD	HNI	EVIP	SGSLGLD	I	ALGVGGY	PKGR		68	
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 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
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 393141 GCU34 RS10145 WP 072782511.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
consensus

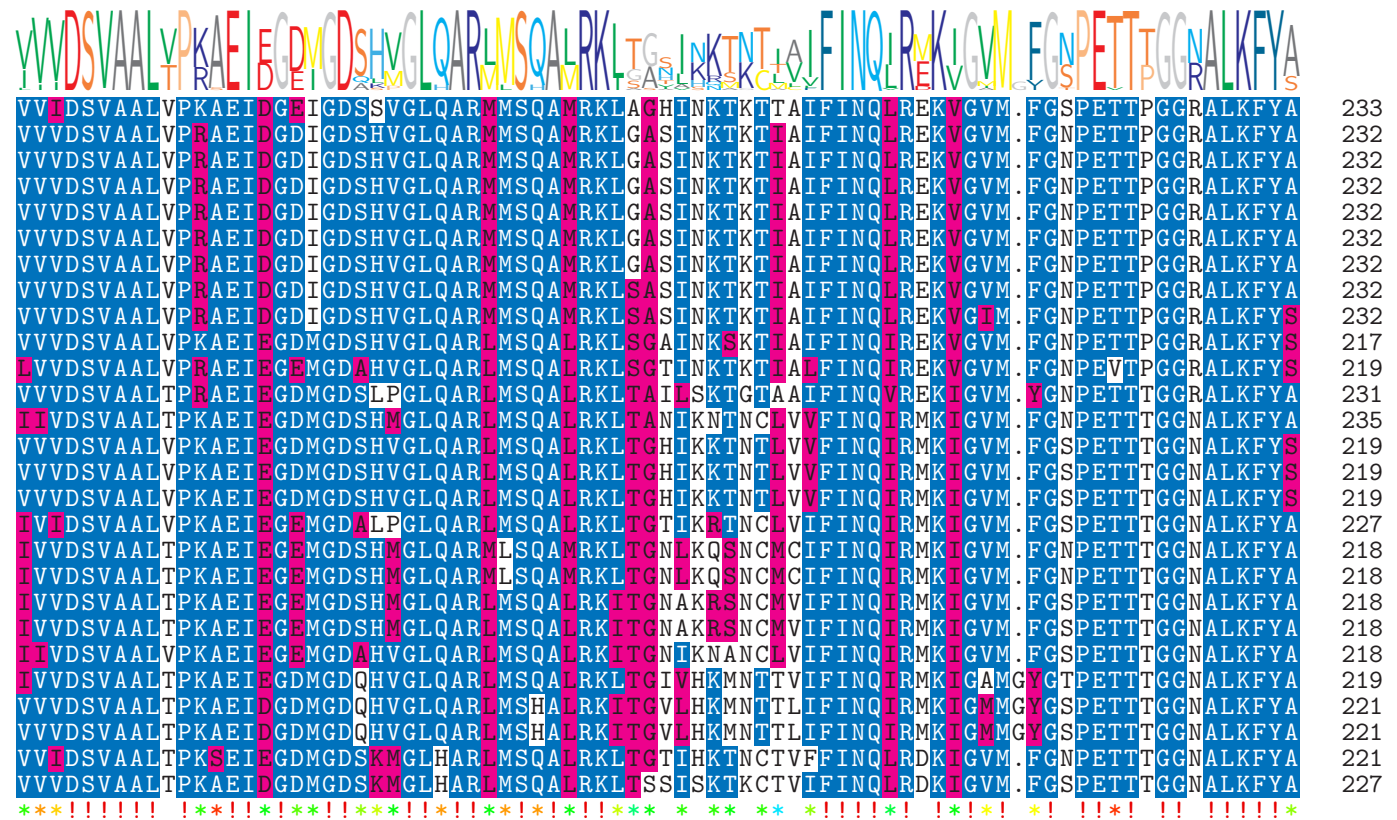
```



```

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 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 0049255639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1205 PSJM300 05545 AFN77183.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 393141 GCU34 RS10145 WP 072782511.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
consensus

```



logo

NTDB id 600 KW2 RS01765 WP 011675413.1	SVRLDVRGSTKIEEGS.GDNKTQIGKITKIKVVKNKVAPPFKVALVDIMF	GEGISSTGELINIAVEEGI	TKKSGAWFAYN	312						
NTDB id 269 KZH43 RS08665 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFK	EAVVEIMYGE	GISKGTGELLKIASDLDI	TKKAGAWYSYK	311				
NTDB id 228 SPD RS09265 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFK	EAVVEIMYGE	GISKGTGELLKIASDLDI	TKKAGAWYSYK	311				
NTDB id 194 SPR RS08825 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFK	EAVVEIMYGE	GISKGTGELLKIASDLDI	TKKAGAWYSYK	311				
NTDB id 159 SP RS09750 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFK	EAVVEIMYGE	GISKGTGELLKIASDLDI	TKKAGAWYSYK	311				
NTDB id 499 SM12261 RS08315 WP 078228268.1	SVRLDVRGSTQIKGTG.DQKDTN	VGKETKIKVVKNKVAPPFK	EAFVEIMYGE	GISKGTGELLKIASDLDI	TKKAGAWYSYK	311				
NTDB id 527 SMSK321 RS11065 WP 001085454.1	SVRLDVRGSTQIKGTG.DQKDTN	VGKETKIKVVKNKVAPPFK	EAFVEIMYGE	GISKGTGELLKIASDLDI	TKKAGAWYSYK	311				
NTDB id 453 Spy49 1753c ACI62003.1	SVRLDVRGTTQIKGTG.DQKDS	IGKETKIKVVKNKVAPPFK	VAEVEIMYGE	GISRTGELVKIASDLDI	IKKAGAWFSYN	311				
NTDB id 408 SMU RS09530 WP 002262392.1	SVRLDVRGNTQIKGTG.EQKDSN	IGKETKIKVVKNKVAPPFK	EAFVEI	IYGE	GISRGTGELVKIASDLGI	IKKAGAWYSYN	311			
NTDB id 115 BSU 16940 NP 389576.2	SVRLEVRRAEQLKQGN.....	DVMGNKTKIKVVKNKVAPPFR	TAEVDIMYGE	GISKEGEI	IDLGTEL	DIVQKSGSWYSYE	292			
NTDB id 625 LCA RS02525 WP 011374196.1	TVRLEVRRAETIKNGT.....	DMIGNRARIKVVKNKVAPPFK	VAEVDIMYGG	GISRTGELVDM	AVEKDI	INKSGSWYSYG	294			
NTDB id 1313 DR RS12030 WP 010888966.1	SVRLDVRKIGQP.....	TKVGND	AVANTVKIKTKVNKVA	APFKEVELA	LVYGKG	FDQLSDLVGLA	ADMDI	TKKAGSFYSYG	307	
NTDB id 1389 A4U84 RS07560 WP 021112712.1	SVRLDIRRCGVV.....	KDGEIIGSETKVKVVKNKVAPPFR	EVQFDIMYGE	GISR	MNEL	LILAEANGFI	KKSGAWFSYD	310		
NTDB id 1130 NGFG RS03960 WP 003688695.1	SVRLDIRRTGSI.....	KKGEVVLGNETR	VKVIKNKVAPPFR	QAEFDILYGE	GISWEGELID	IGVKNDI	INKSGAWYSYN	294		
NTDB id 1124 NGFG RS03960 WP 003688695.1	SVRLDIRRTGSI.....	KKGEVVLGNETR	VKVIKNKVAPPFR	QAEFDILYGE	GISWEGELID	IGVKNDI	INKSGAWYSYN	294		
NTDB id 1123 OK783 RS03845 WP 003688695.1	SVRLDIRRTGSI.....	KKGEVVLGNETR	VKVIKNKVAPPFR	QAEFDILYGE	GISWEGELID	IGVKNDI	INKSGAWYSYN	294		
NTDB id 1427 RS RS02760 WP 011000510.1	SVRLDIRRIGSI.....	KKGDEV	VGNETKVKVVKNKVAPPFR	EAI	FIDILYGAG	VSREGEI	IDLGVEAKV	VEKSGAWYSYN	302	
NTDB id 1165 A1552VC RS01565 WP 000344154.1	SVRLDIRRTGAI.....	KEGEVVLGNETR	IKVVKNKIAAPFKEANT	QIMYGG	GFNREGELID	LGVKHKM	MVEKSGAWYSYN	293		
NTDB id 1142 GTF74 RS11550 WP 000344154.1	SVRLDIRRTGAI.....	KEGEVVLGNETR	IKVVKNKIAAPFKEANT	QIMYGG	GFNREGELID	LGVKHKM	MVEKSGAWYSYN	293		
NTDB id 1022 ACIAD RS06390 WP 004925639.1	SVRLDIRRIGQV.....	KEGDEIIGSETKVKVVKNKM	APPFR	EAI	FQILYGKG	VNQLGELVD	LAVQQNIV	QKAGAWYSYQ	293	
NTDB id 1074 ABD1 RS10195 WP 000344167.1	SVRLDIRRIGQV.....	KEGDEIIGSETKVKVVKNKM	APPFR	EAI	FQILYGKG	GTNQLGELVD	LAVQQDIV	QKAGAWYSYQ	293	
NTDB id 1205 PSJM300 05545 AFN77183.1	SVRLDIRRTGAV.....	KEGDEV	VGSETR	VKVVKNKVAPPFR	QAEFQILYGKG	IYRNGEI	IDLG	VQQGLVEKSGAWYAYK	293	
NTDB id 1245 Cj1673c YP 002345041.1	SVRLDVRKVATL.....	KQNEEP	IGNRVKVKVVKNKVAPPFR	QAEFDVM	FGEGLS	RREGELIDY	GVKLDIV	DKSGAWFSYK	294	
NTDB id 1211 C694 RS00795 WP 000963128.1	SVRIDIRRIASL.....	KQNEQH	IGNRAKAKVVKNKVAPPFR	EAEFDIMF	GEGISKEGEI	IDYGVKLDIV	DKSGAWLSYQ	296		
NTDB id 1214 NCTC11637 00359 SQJ03206.1	SVRIDIRRIAL.....	KQNEQH	IGNRAKAKVVKNKVAPPFR	EAEFDIMF	GEGISKEGEI	IDYGVKLDIV	DKSGAWLSYQ	296		
NTDB id 393141 GCU34 RS10145 WP 072782511.1	SVRVDIRKSSQI.....	KDGENV	IGNRAKVKIKVNKVAPPFR	TAEFDIMYGE	GEGVSKVGEVLD	LAVDYEIV	KKSGSWFSYG	296		
NTDB id 1334 RAOC RS04870 WP 004918236.1	SVRIDIRRLSLSDTGKIKDKSGEV	IGNR	TKVKVVKNKVAPPFK	SAEFDIMYGE	GEGVSKVGEILD	VATDL	DIIQKSGSWFSYQ	307		
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 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
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 393141 GCU34 RS10145 WP 072782511.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
consensus

[illegible]

logo

		IEE	
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 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
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 393141	GCU34 RS10145 WP 072782511.1	...	333
NTDB id 1334	RAOC RS04870 WP 004918236.1	...	343
consensus			

- X non conserved
- X similar
- X ≥ 50% conserved