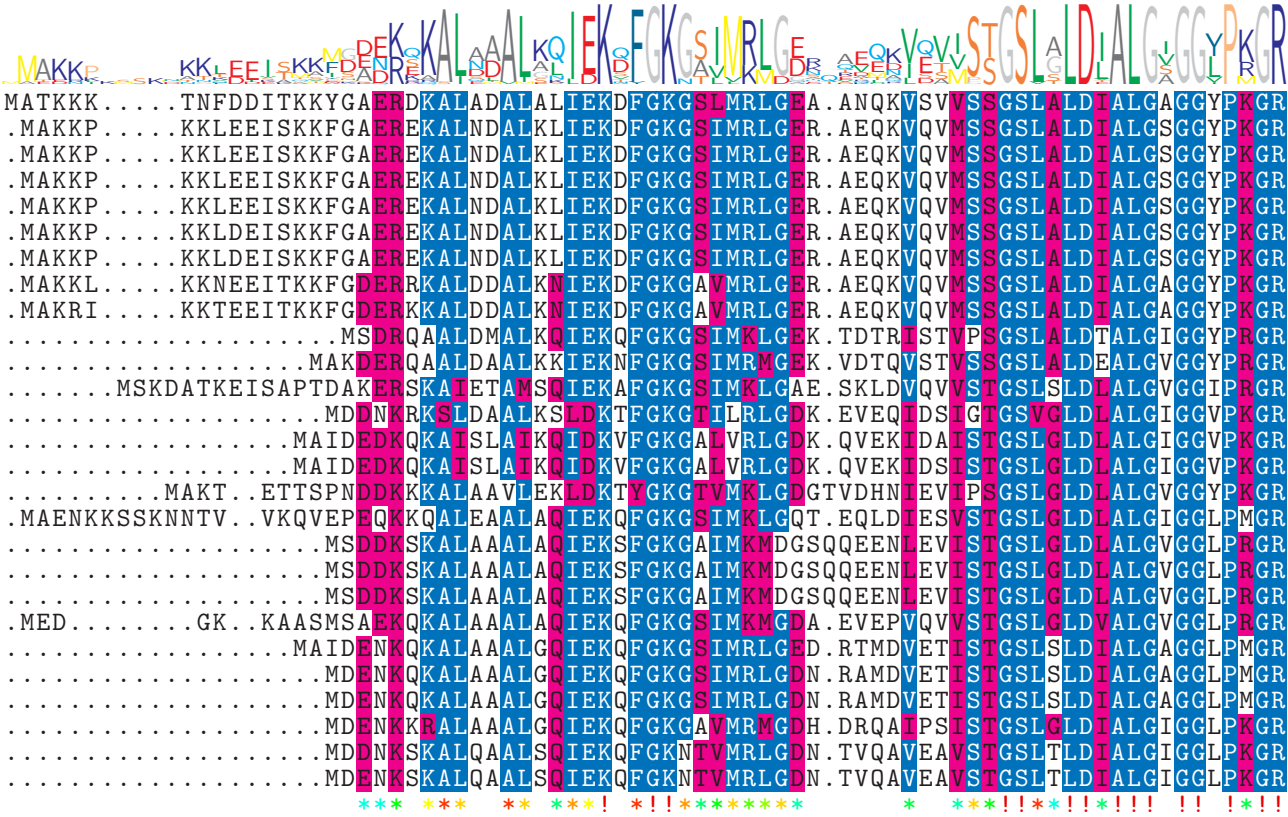


logo

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 149938 H224 RS05955 WP 002914769.1
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 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

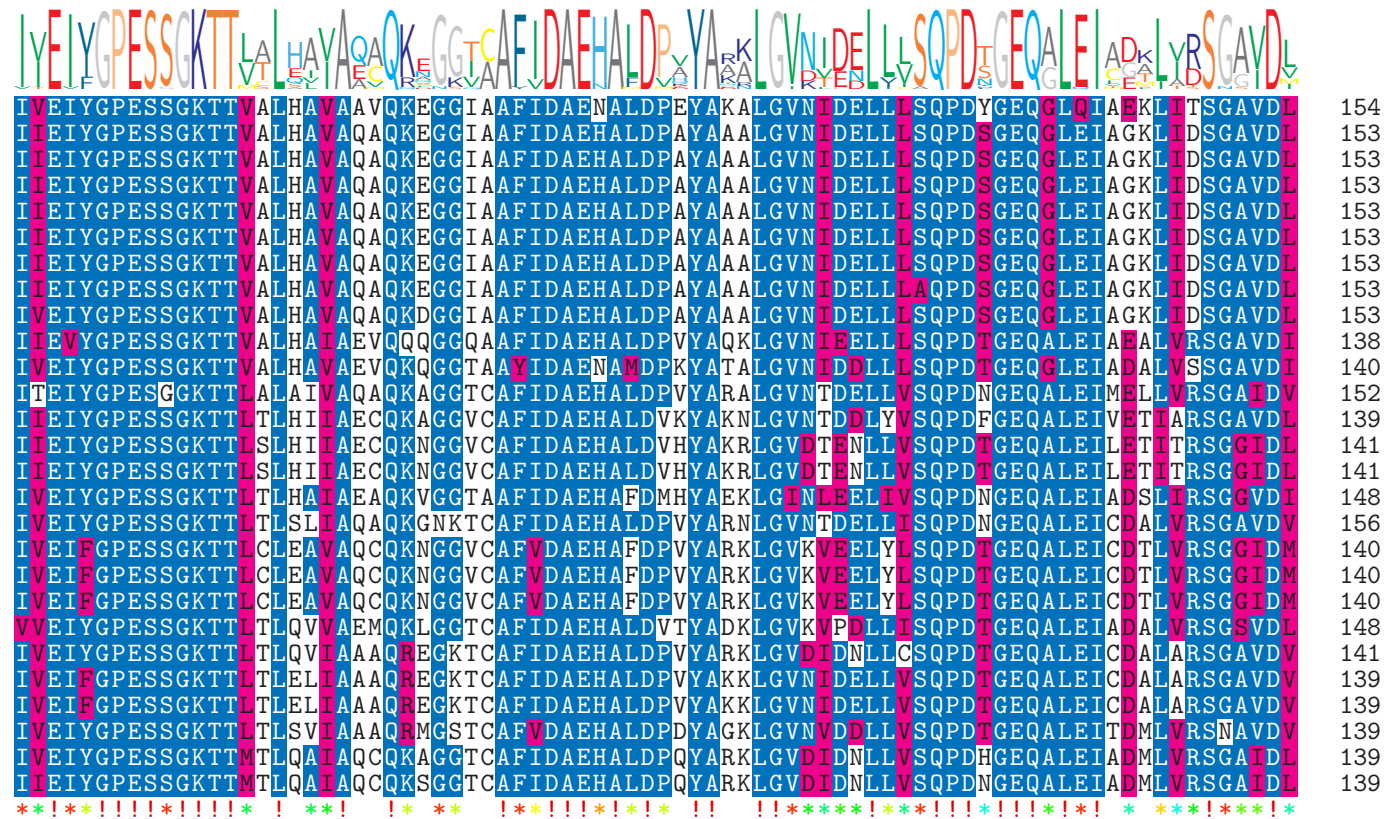


74
73
73
73
73
73
73
73
73
58
60
72
59
61
61
68
76
60
60
60
68
61
59
59
59
59
59

```

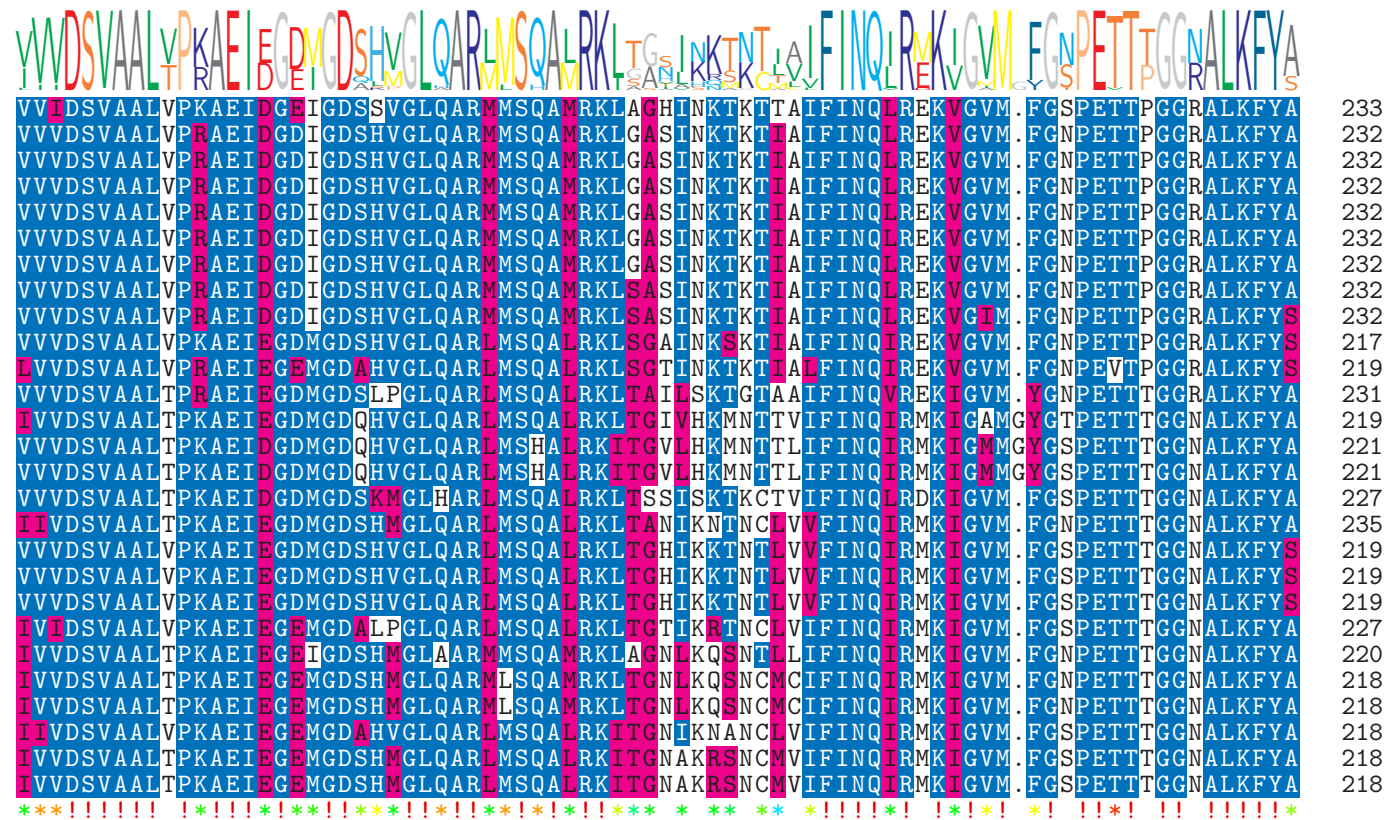
NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 453 Spy49 1753c 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 149938 H224 RS05955 WP 002914769.1
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 149938 H224 RS05955 WP 002914769.1
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

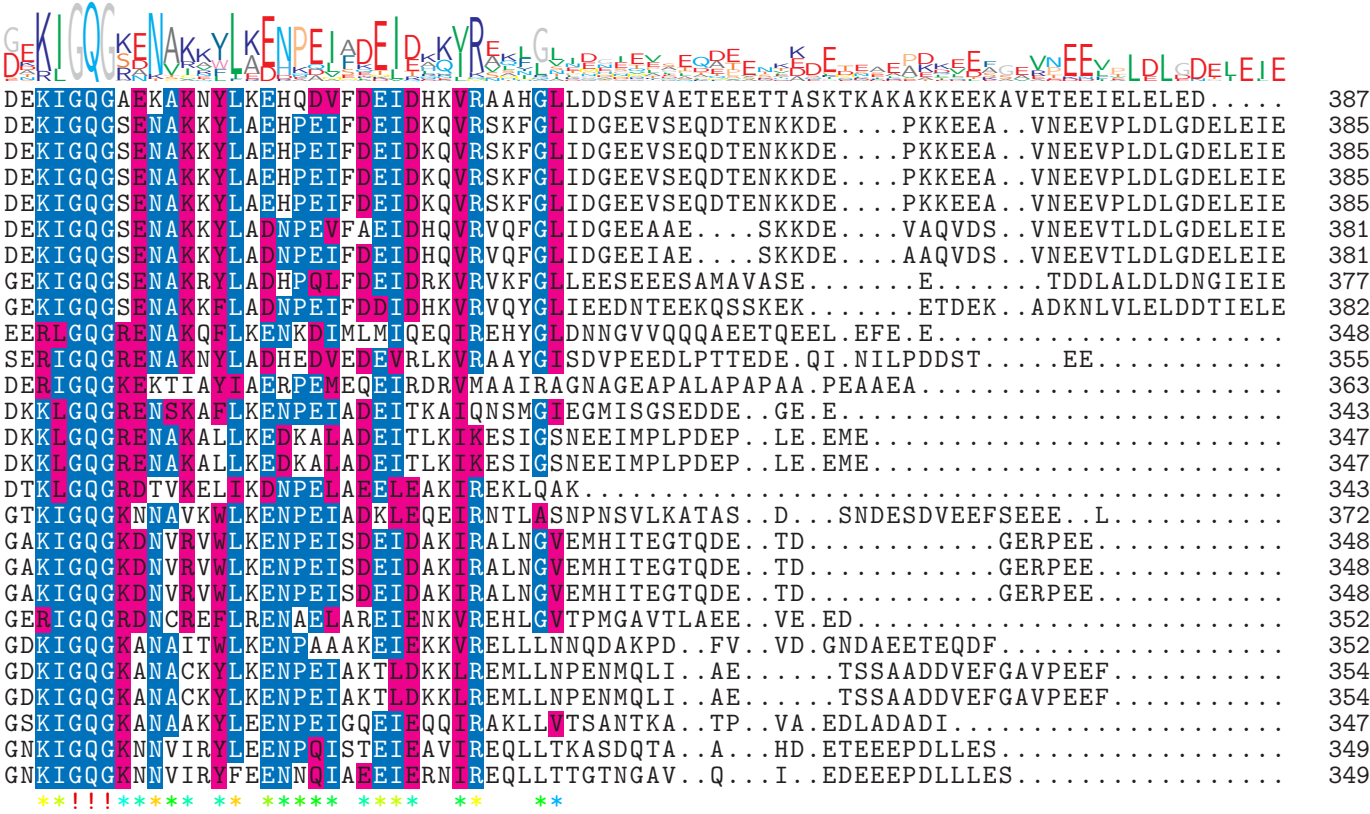


logo

NTDB id 600 KW2 RS01765 WP 011675413.1	SVRLDVRGSTKIEEGS.GDNKTQIGKITKIKVVKNKVAPPFKEA	LDIMFGEGISSTGELINIAVEEGI	I	IKKSGAWFAYN	312					
NTDB id 269 KZH43 RS08665 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFKEAVV	EIMYEGEGISKTGEL	LKIASDL	DIIKKAGAWYSYK 311					
NTDB id 228 SPD RS09265 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFKEAVV	EIMYEGEGISKTGEL	LKIASDL	DIIKKAGAWYSYK 311					
NTDB id 194 SPR RS08825 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFKEAVV	EIMYEGEGISKTGEL	LKIASDL	DIIKKAGAWYSYK 311					
NTDB id 159 SP RS09750 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFKEAVV	EIMYEGEGISKTGEL	LKIASDL	DIIKKAGAWYSYK 311					
NTDB id 527 SMSK321 RS11065 WP 001085454.1	SVRLDVRGSTQIKGTG.DQKDTN	VGKETKIKVVKNKVAPPFKEAFV	EIMYEGEGISKTGEL	LKIASDL	DIIKKAGAWYSYK 311					
NTDB id 499 SM12261 RS08315 WP 078228268.1	SVRLDVRGSTQIKGTG.DQKDTN	VGKETKIKVVKNKVAPPFKEAFV	EIMYEGEGISKTGEL	LKIASDL	DIIKKAGAWYSYK 311					
NTDB id 453 Spy49 1753c ACI62003.1	SVRLDVRGTTQIKGTG.DQKDS	IGKETKIKVVKNKVAPPFKEAEV	EIMYEGEGISRTGEL	VKIASDL	DIIQKAGAWFSYN 311					
NTDB id 408 SMU RS09530 WP 002262392.1	SVRLDVRGNTQIKGTG.EQKDS	IGKETKIKVVKNKVAPPFKEAFV	EIMYEGEGISRTGEL	VKIASDL	GIIQKAGAWYSYN 311					
NTDB id 115 BSU 16940 NP 389576.2	SVRLEVRRAEQLKQGN.....	DVMGNKTKIKVVKNKVAPPFR	TAEVDIMYEGEGISKEGE	IIDLGT	ELDIIQKSGSWYSYE 292					
NTDB id 625 LCA RS02525 WP 011374196.1	TVRLEVRRAETIKNGT.....	DMIGNRARIKVVKNKVAPPFKEAEV	DIMYGGISRTGEL	VDMAVEK	DIINKSGSWYSYG 294					
NTDB id 1313 DR RS12030 WP 010888966.1	SVRLDVRKIGQ....PTKVGND	AVANTVKIKTVKNKVAAPFKE	VELALVYGKGF	QDLSDLVGL	AADMIIKKAGSFYSYG 307					
NTDB id 1245 Cj1673c YP 002345041.1	SVRLDVRKVAT....L.KQNE	EPIGNRVKIKVVKNKVAPPFR	QAEFDVMFGEGLSR	EGELIDYGV	KLDIVDKSGAWFSYK 294					
NTDB id 1214 NCTC11637 00359 SQJ03206.1	SVRIDIRRIAA....L.KQNE	QHIGNRAKAKVVKNKVAPPFR	EAEFDIMFGEGISKEGE	IIDYGV	KLDIVDKSGAWLSYQ 296					
NTDB id 1211 C694 RS00795 WP 000963128.1	SVRIDIRRIAS....L.KQNE	QHIGNRAKAKVVKNKVAPPFR	EAEFDIMFGEGISKEGE	IIDYGV	KLDIVDKSGAWLSYQ 296					
NTDB id 1334 RAOC RS04870 WP 004918236.1	SVRIDIRRLSDTGKIKDKSG	EVIGNRTKIKVVKNKVAPPFK	SAEFDIMYEGGVSKVGE	ILDVAT	LDIIQKSGSWFSYQ 307					
NTDB id 1389 A4U84 RS07560 WP 021112712.1	SVRLDIRRCGV....V.KDG	DEIIGSETKIKVVKNKVAPPFR	EVQFDIMYEGEGISRM	NELLILAE	ANGFIKKSGAWFSYD 310					
NTDB id 1130 NGFG RS03960 WP 003688695.1	SVRLDIRRTGS....I.KKG	EEVLGNETRVKVIKNKVAPPFR	QAEFDILYEGEGISW	EGELIDIGV	KNDIINKSGAWYSYN 294					
NTDB id 1124 NGFG RS03960 WP 003688695.1	SVRLDIRRTGS....I.KKG	EEVLGNETRVKVIKNKVAPPFR	QAEFDILYEGEGISW	EGELIDIGV	KNDIINKSGAWYSYN 294					
NTDB id 1123 OK783 RS03845 WP 003688695.1	SVRLDIRRTGS....I.KKG	EEVLGNETRVKVIKNKVAPPFR	QAEFDILYEGEGISW	EGELIDIGV	KNDIINKSGAWYSYN 294					
NTDB id 1427 RS RS02760 WP 011000510.1	SVRLDIRRIGS....I.KKG	DEVVGNETKIKVVKNKVAPPFR	EAEIFDILYGA	GVSRGE	IIDLGV	EAKVVEKSGAWYSYN 302				
NTDB id 149938 H224 RS05955 WP 002914769.1	SVRLDIRRIGA....V.KEG	DNVVGSETRVKVVKNKIA	APFKQAEFQILYGE	GINFYGEL	VDLGVKEKLLIEKAGAWYSYN 295					
NTDB id 1165 A1552VC RS01565 WP 000344154.1	SVRLDIRRTGA....I.KEG	EEVVGNETRIKVVKNKIA	APFKEANTQIMYGG	GFNR	REGELIDLGVKHKMVEKSGAWYSYN 293					
NTDB id 1142 GTF74 RS11550 WP 000344154.1	SVRLDIRRTGA....I.KEG	EEVVGNETRIKVVKNKIA	APFKEANTQIMYGG	GFNR	REGELIDLGVKHKMVEKSGAWYSYN 293					
NTDB id 1205 PSJM300 05545 AFN77183.1	SVRLDIRRTGA....V.KEG	DEVVGSETRVKVVKNKVAPPFR	QAEFQILYGKGIYR	NGEIDL	GVQGLVEKSGAWYAYK 293					
NTDB id 1022 ACIAD RS06390 WP 004925639.1	SVRLDIRRIGQ....V.KEG	DEIIGSETKIKVVKNKMAPP	FR	EAEIFQILYGKGVN	QLGELVDLAVQQNIVQKAGAWYSYK 293					
NTDB id 1074 ABD1 RS10195 WP 000344167.1	SVRLDIRRIGQ....V.KEG	DEIIGSETKIKVVKNKMAPPF	KEAIFQILYGKGTN	QLGELVDLAVQQ	DIVQKAGAWYSYQ 293					
consensus	*!!**!* *	*	**	*****!!*!!*!!*!!*	*	*****!!*!!*!!*!!*	*****	***	***	!!*!!*!!

logo

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 149938 H224 RS05955 WP 002914769.1
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 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
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 527 SMSK321 RS11065 WP 001085454.1	IEE	384
NTDB id 499 SM12261 RS08315 WP 078228268.1	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 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 149938 H224 RS05955 WP 002914769.1	...	352
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