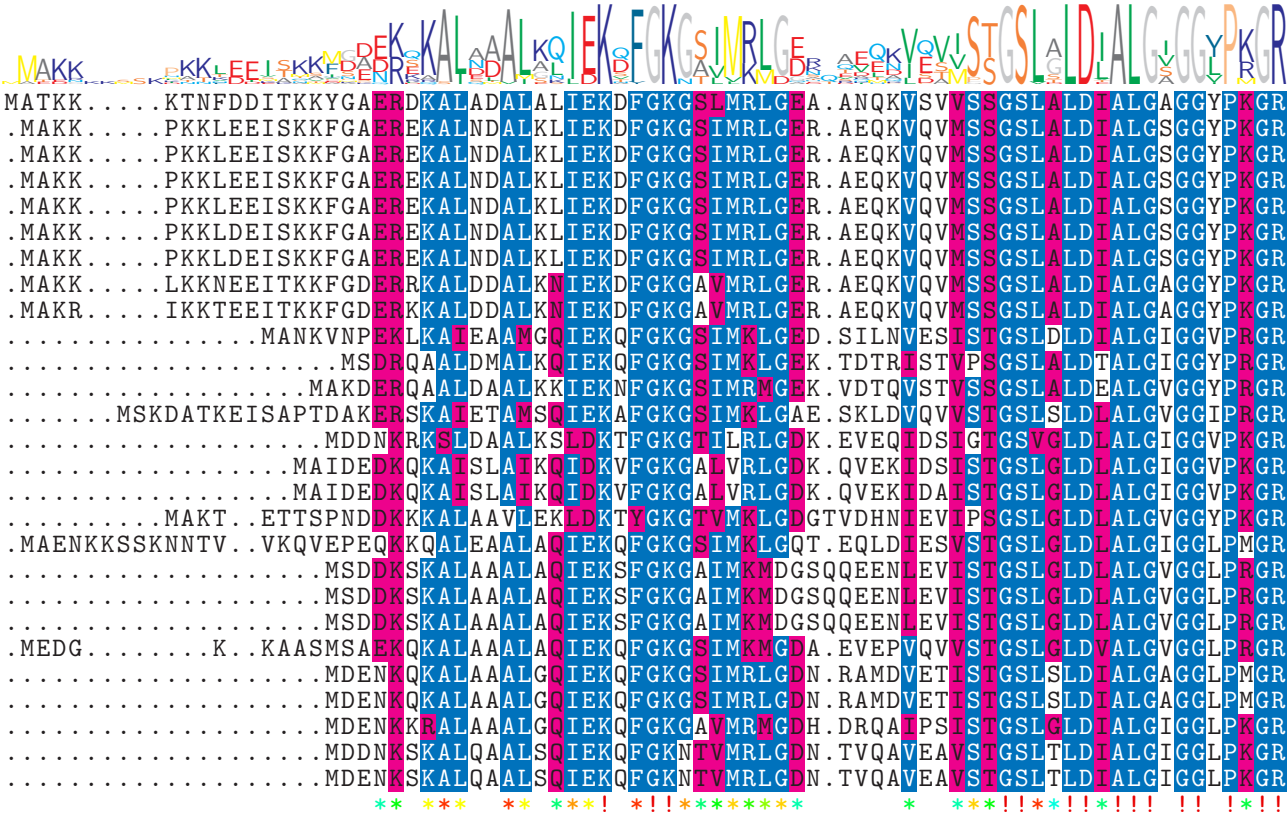


logo

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 45992 CBF RS12035 WP 012100363.1
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 1205 PSJM300 05545 AFN77183.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

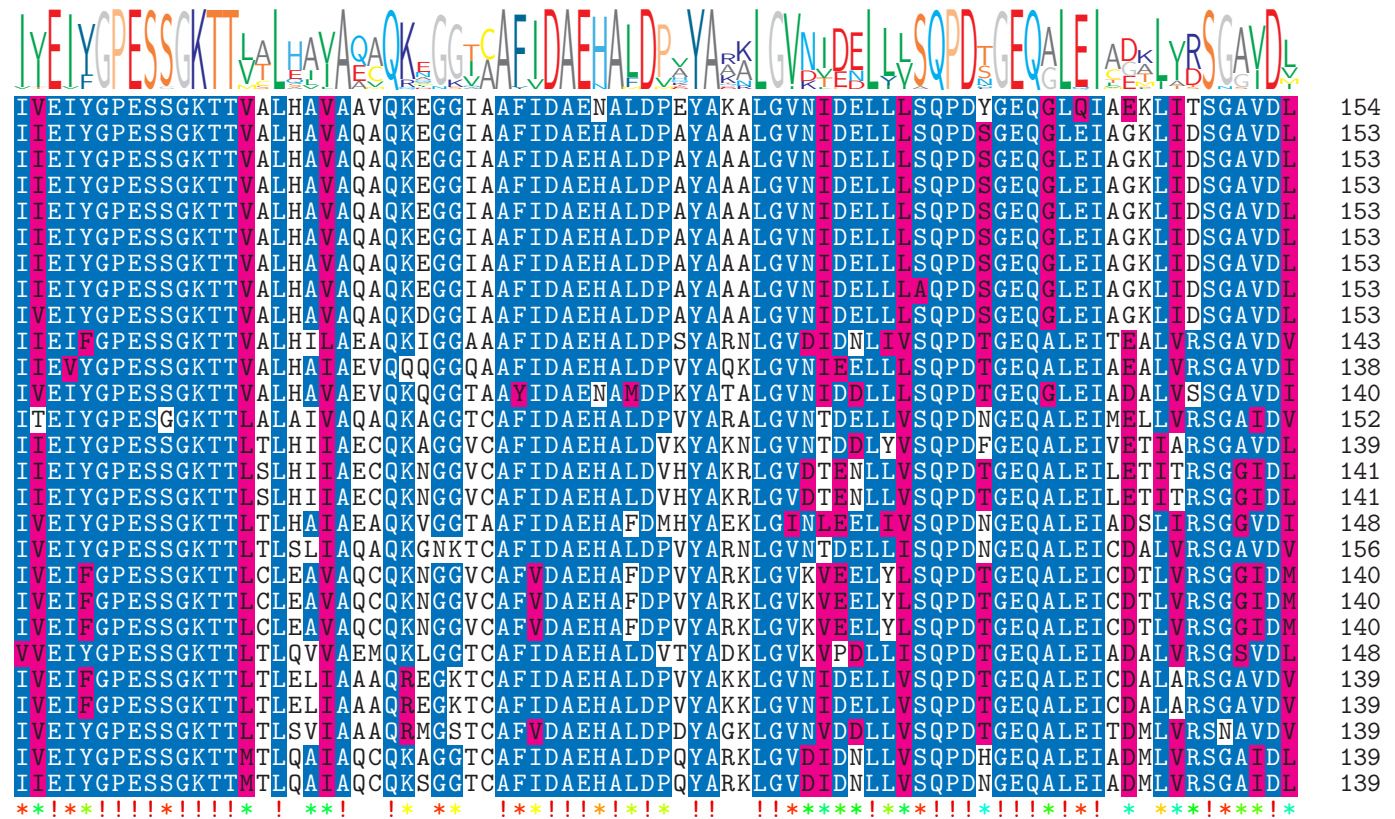


74
73
73
73
73
73
73
73
73
73
63
58
60
72
59
61
61
68
76
60
60
60
68
59
59
59
59
59

```

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 45992 CBF RS12035 WP 012100363.1
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 1205 PSJM300 05545 AFN77183.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

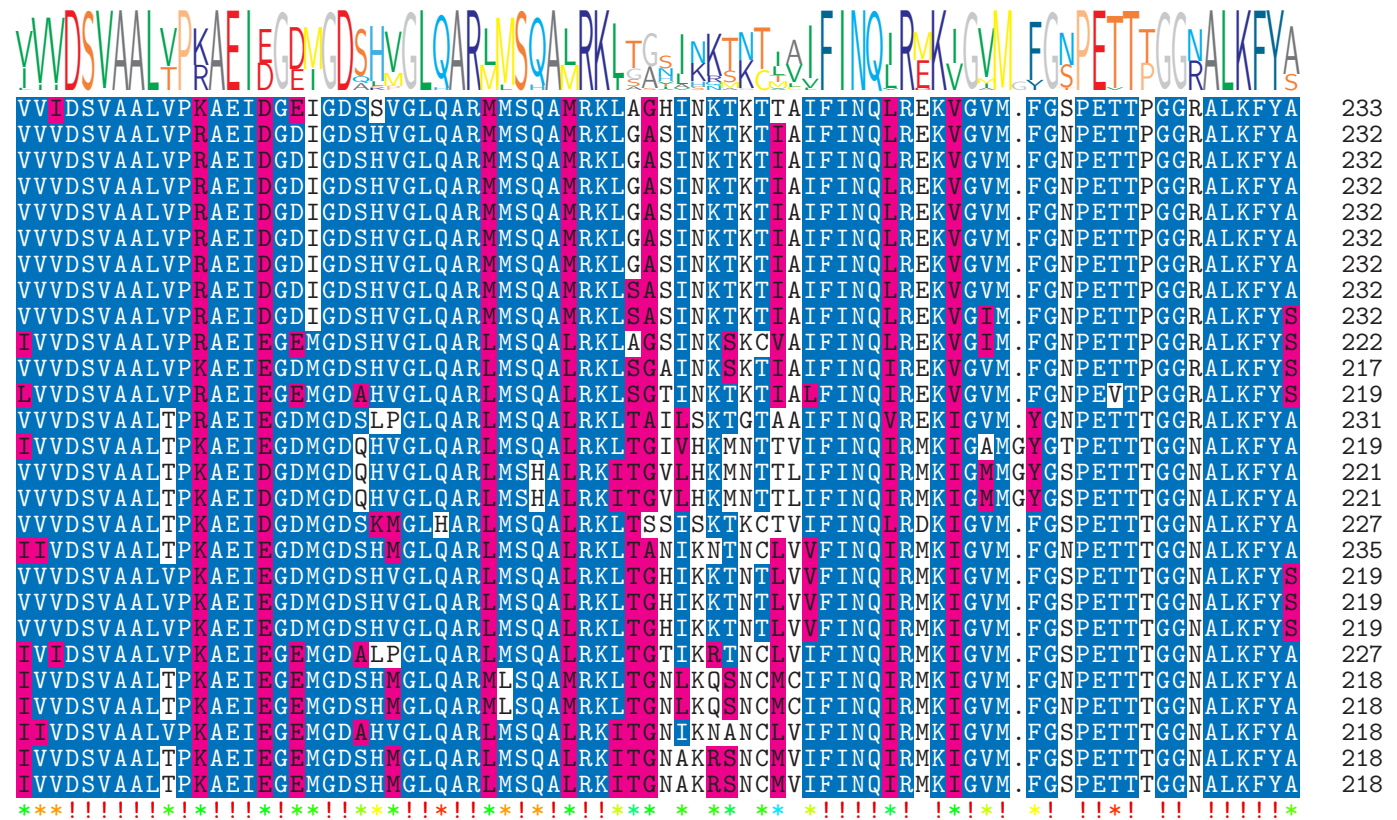
```



```

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 45992 CBF RS12035 WP 012100363.1
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 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	SVRLDVRG	STKIEEGS	.GDNKTQ	IGKITK	IKVVKNKVAPPF	KVALV	DIMF	GEGIS	STGEL	INIAVEEG	ITIKK	SGAWF	AYN	312																													
NTDB id 269 KZH43 RS08665 WP 001085462.1	SVRLDVRG	NTQIKGTG	.DQKETN	VGKETK	IKVVKNKVAPPF	KEAVV	EIMY	GEGISK	TGELL	KIASDL	DI	IKK	AGAWYSYK	311																													
NTDB id 228 SPD RS09265 WP 001085462.1	SVRLDVRG	NTQIKGTG	.DQKETN	VGKETK	IKVVKNKVAPPF	KEAVV	EIMY	GEGISK	TGELL	KIASDL	DI	IKK	AGAWYSYK	311																													
NTDB id 194 SPR RS08825 WP 001085462.1	SVRLDVRG	NTQIKGTG	.DQKETN	VGKETK	IKVVKNKVAPPF	KEAVV	EIMY	GEGISK	TGELL	KIASDL	DI	IKK	AGAWYSYK	311																													
NTDB id 159 SP RS09750 WP 001085462.1	SVRLDVRG	NTQIKGTG	.DQKETN	VGKETK	IKVVKNKVAPPF	KEAVV	EIMY	GEGISK	TGELL	KIASDL	DI	IKK	AGAWYSYK	311																													
NTDB id 527 SMSK321 RS11065 WP 001085454.1	SVRLDVRG	STQIKGTG	.DQKDTN	VGKETK	IKVVKNKVAPPF	KEAFV	EIMY	GEGISK	TGELL	KIASDL	DI	IKK	AGAWYSYK	311																													
NTDB id 499 SM12261 RS08315 WP 078228268.1	SVRLDVRG	STQIKGTG	.DQKDTN	VGKETK	IKVVKNKVAPPF	KEAFV	EIMY	GEGISK	TGELL	KIASDL	DI	IKK	AGAWYSYK	311																													
NTDB id 453 Spy49 1753c ACI62003.1	SVRLDVRG	TQIKGTG	.DQKDS	IGKETK	IKVVKNKVAPPF	KVAEV	EIMY	GEGISRT	GELV	KIASDL	DI	IKK	AGAWFSYN	311																													
NTDB id 408 SMU RS09530 WP 002262392.1	SVRLDVRG	NTQIKGTG	.EQKDSN	IGKETK	IKVVKNKVAPPF	KEAFV	EIIY	GEGISRT	GELV	KIASDL	GI	IKK	AGAWFSYN	311																													
NTDB id 45992 CBF RS12035 WP 012100363.1	SVRLDVR	RRIDS	IKQGD	QIL	GNRTRVK	IKNKNVAPPF	KMAEFD	DIMY	NEGISK	VGNILD	VGVRE	ELVD	DKSGSWFSYK	297																													
NTDB id 115 BSU 16940 NP 389576.2	SVRL	EV	RRAEQLKQGN	DVM	GNKTK	IKVVKNKVAPPF	RTAEV	DIMY	GEGISKE	GEIIDL	GT	ELDIV	QKSGSWSYE	292																													
NTDB id 625 LCA RS02525 WP 011374196.1	TVRL	EV	RRAETIKNGT	DM	IGNRARI	IKVVKNKVAPPF	KVAEV	DIMY	GGISRT	GELVDM	AVEK	DI	INKSGSWSYG	294																													
NTDB id 1313 DR RS12030 WP 010888966.1	SVRLDVR	KIGQ	PTK	VGNDA	VANTVK	IKTVKNKVA	APFKEVELA	L	VY	GKGF	DQLSDL	VGL	LAADM	DI	IKKAGSFYSYG	307																											
NTDB id 1245 Cj1673c YP 002345041.1	SVRLDVR	KVAT	L.KQNE	EEP	IGNRVK	VVVKNKVAPPFR	QAEF	D	VMF	GEG	LSREGE	LIDYGV	KLDIV	DKSGAWFSYK	294																												
NTDB id 1211 C694 RS00795 WP 000963128.1	SVRIDIR	RIAS	L.KQNE	EQH	IGNRAK	AKVVKNKVAPPF	REAEF	DIMF	GEGISKE	GEI	IIDYGV	KLDIV	DKSGAWLSYQ	296																													
NTDB id 1214 NCTC11637 00359 SQJ03206.1	SVRIDIR	RIAA	L.KQNE	EQH	IGNRAK	AKVVKNKVAPPF	REAEF	DIMF	GEGISKE	GEI	IIDYGV	KLDIV	DKSGAWLSYQ	296																													
NTDB id 1334 RAOC RS04870 WP 004918236.1	SVRIDIR	RS	SLSDTGKIKDKSGEV	IGNRTK	VVVKNKVAPPF	KSAEF	DIMY	GEGV	SKVGE	ILD	VATDL	DI	IQKSGSWFSYQ	307																													
NTDB id 1389 A4U84 RS07560 WP 021112712.1	SVRLDIR	RCGV	V.KDG	DEI	IGSE	TKVVKNKVAPPF	REVQFD	DIMY	GEGIS	RMNELL	ILAE	ANGFI	IKKSGAWFSYD	310																													
NTDB id 1130 NGFG RS03960 WP 003688695.1	SVRLDIR	RTGS	I.KKG	EEV	LGNETR	VKV	IKNKVAPPFR	QAEF	DILY	GEGIS	WEGEL	IDIGV	KNDI	INKSGAWYSYN	294																												
NTDB id 1124 NGFG RS03960 WP 003688695.1	SVRLDIR	RTGS	I.KKG	EEV	LGNETR	VKV	IKNKVAPPFR	QAEF	DILY	GEGIS	WEGEL	IDIGV	KNDI	INKSGAWYSYN	294																												
NTDB id 1123 OK783 RS03845 WP 003688695.1	SVRLDIR	RTGS	I.KKG	EEV	LGNETR	VKV	IKNKVAPPFR	QAEF	DILY	GEGIS	WEGEL	IDIGV	KNDI	INKSGAWYSYN	294																												
NTDB id 1427 RS RS02760 WP 011000510.1	SVRLDIR	RIGS	I.KKG	DEV	VGNETK	VVVKNKVAPPF	REAI	F	DILY	GAGV	SREGE	IIDL	GV	EAKVVEKSGAWYSYN	302																												
NTDB id 1165 A1552VC RS01565 WP 000344154.1	SVRLDIR	RTGA	I.KEG	EEV	VGNETR	IKVVKNK	IAAPFKEANTQ	IMY	GGFN	REGEL	IDL	GV	KKHMVEKSGAWYSYN	293																													
NTDB id 1142 GTF74 RS11550 WP 000344154.1	SVRLDIR	RTGA	I.KEG	EEV	VGNETR	IKVVKNK	IAAPFKEANTQ	IMY	GGFN	REGEL	IDL	GV	KKHMVEKSGAWYSYN	293																													
NTDB id 1205 PSJM300 05545 AFN77183.1	SVRLDIR	RTGA	V.KEG	DEV	VGSE	TRV	VVVKNKVAPPFR	QAEF	QILY	GKGI	YRN	GEI	IDL	GV	QGLVEKSGAWYAYK	293																											
NTDB id 1022 ACIAD RS06390 WP 004925639.1	SVRLDIR	RIGQ	V.KEG	DEI	IGSE	TKV	VVVKNKMAPPF	REAI	FQILY	GKGV	NQL	GELVD	LAV	QQNIVQKAGAWYSYQ	293																												
NTDB id 1074 ABD1 RS10195 WP 000344167.1	SVRLDIR	RIGQ	V.KEG	DEI	VGSE	TKV	VVVKNKMAPPF	KEAI	FQILY	GKGT	NQL	GELVD	LAV	QQDIVQKAGAWYSYQ	293																												
consensus	*!!***!*														*	**	*****!***!!*!!*!!* *										*	*****!***										*****		***		*** ! !*****!	

logo

NTDB id 600 KW2 RS01765 WP 011675413.1	DEKIGQGA	EKAKNYLKEHQDV	DEIDHKVRAAHG	LDDSEVAETEEETTA	...	SKTKAKAKKEEKAVETEEIELELED	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKK	...	DE...PKKEEA..VNEEVPLDLGDE	381
NTDB id 228 SPD RS09265 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKK	...	DE...PKKEEA..VNEEVPLDLGDE	381
NTDB id 194 SPR RS08825 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKK	...	DE...PKKEEA..VNEEVPLDLGDE	381
NTDB id 159 SP RS09750 WP 001085462.1	DEKIGQGS	ENAKKYLAEHPEIF	DEIDKQVRSKFGL	IDGEEVSEQDTENKK	...	DE...PKKEEA..VNEEVPLDLGDE	381
NTDB id 527 SMSK321 RS11065 WP 001085454.1	DEKIGQGS	ENAKKYLADNPEVFAE	IDHQVRVQFGL	IDGEEAAE	...	SKK...DE...VAQVDS..VNEEVTLDLGDE	377
NTDB id 499 SM12261 RS08315 WP 078228268.1	DEKIGQGS	ENAKKYLADNPEIF	DEIDHQVRVQFGL	IDGEEIAE	...	SKK...DE...AAQVDS..VNEEVTLDLGDE	377
NTDB id 453 Spy49 1753c ACI62003.1	GEKIGQGS	ENAKRYLADHPQLF	DEIDRKVRVKFGL	LEESEESAMAVASE	...	E.....TDDLALDLNG	373
NTDB id 408 SMU RS09530 WP 002262392.1	GEKIGQGS	ENAKKFLADNPEIF	DDIDHKVRVQYGL	IEEDNTEEKQSSKEK	...	ETDEK..ADKNLVLELDDT	378
NTDB id 45992 CBF RS12035 WP 012100363.1	DT	RLGQGR	ENAKQFLKDNMNIALE	IENTIRKKHDL	LPVADAKNLNIENKK	QDNKE.....G.....	352
NTDB id 115 BSU 16940 NP 389576.2	EERL	GQGR	ENAKQFLKENKDIMLMIQE	QIREHYGL	DNNGVVQQQAETQE	...E.LEFE.E.....	348
NTDB id 625 LCA RS02525 WP 011374196.1	SERIG	QGR	ENAKNYLADHEDVE	DEVRLKVRAAYG	ISDVPEEDLPTTEDE	...Q.INILPDDSTE.....E.....	355
NTDB id 1313 DR RS12030 WP 010888966.1	DERIG	QGGKEK	TIAYIAERP	EMEQEIRDRVMAAIRAGNAGEAPALAPAPAAPEAA	EA	.....	363
NTDB id 1245 Cj1673c YP 002345041.1	DKKL	GQGR	ENSKAFLKENPEIADE	ITKAIQNSMG	IEGMI	SGSEDDE..GEE.....	343
NTDB id 1211 C694 RS00795 WP 000963128.1	DKKL	GQGR	ENAKALLKEDKALADE	ITLKI	KESIGSNEEI	MPLPDEP..LEEME.....	347
NTDB id 1214 NCTC11637 00359 SQJ03206.1	DKKL	GQGR	ENAKALLKEDKALADE	ITLKI	KESIGSNEEI	MPLPDEP..LEEME.....	347
NTDB id 1334 RAOC RS04870 WP 004918236.1	DTKL	GQGR	DTVKELIKDNPELAE	ELEAKIREKLQAK	.....	.....	343
NTDB id 1389 A4U84 RS07560 WP 021112712.1	GTKIG	QGGK	NNAVKWLKENPEIAD	KLQEIRNTLASNPNS	VLKATASDSN	DES	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	GAKIG	QGGK	DNVRVWLKENPEIS	DEIDAKIRALNGVEMHI	TEGT	QDET	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	GAKIG	QGGK	DNVRVWLKENPEIS	DEIDAKIRALNGVEMHI	TEGT	QDET	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	GAKIG	QGGK	DNVRVWLKENPEIS	DEIDAKIRALNGVEMHI	TEGT	QDET	348
NTDB id 1427 RS RS02760 WP 011000510.1	GERIG	QGRDNC	REFLR	ENAELAREIENKVREHLGV	TPMG	AV.TLAE	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	GDKIG	QGGK	ANACKYLLKENPEIAKT	LDKKLREMLLN	PENM	QLIAETSSAA	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	GDKIG	QGGK	ANACKYLLKENPEIAKT	LDKKLREMLLN	PENM	QLIAETSSAA	354
NTDB id 1205 PSJM300 05545 AFN77183.1	GSKIG	QGGK	ANAAYLEENPEIG	QIEQQIRAKLL	VTSAN	TKATPVAEDLADADI	347
NTDB id 1022 ACIAD RS06390 WP 004925639.1	GNKIG	QGGK	NNVIRYLEENPQISTEIEAV	IREQLLT	TKASD	QTAA.HDETEE	349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	GNKIG	QGGK	NNVIRYFEENNQIAEEIERN	IREQLLT	TGTN	GAVQ.I.EDEE	349
consensus	***!!!	*****	**	*****	*****	**	**

logo

NTDB id 600 KW2 RS01765 WP 011675413.1	.....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	LEIEIEE	388
NTDB id 228 SPD RS09265 WP 001085462.1	LEIEIEE	388
NTDB id 194 SPR RS08825 WP 001085462.1	LEIEIEE	388
NTDB id 159 SP RS09750 WP 001085462.1	LEIEIEE	388
NTDB id 527 SMSK321 RS11065 WP 001085454.1	LEIEIEE	384
NTDB id 499 SM12261 RS08315 WP 078228268.1	LEIEIEE	384
NTDB id 453 Spy49 1753c ACI62003.1	IEIED..	378
NTDB id 408 SMU RS09530 WP 002262392.1	IELED..	383
NTDB id 45992 CBF RS12035 WP 012100363.1	.....	352
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 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