

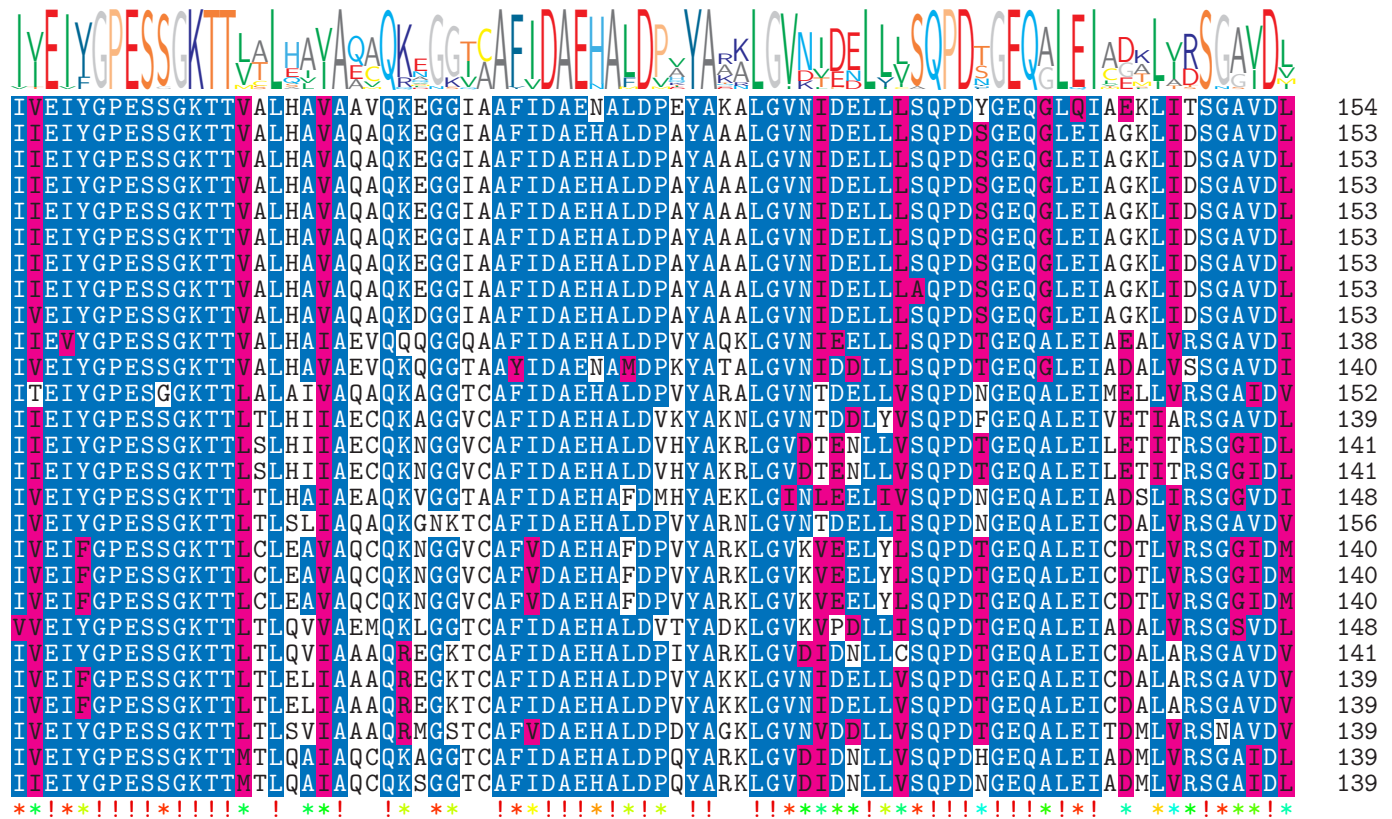
logo

NTDB id 600 KW2 RS01765 WP 011675413.1	MATKKK....TNFDDITKKYGA	ERD	KALADALAL	IEKD	FGKGSIMRLGE	A	ANQKVS	VSS	GSLALD	I	ALGAGGY	PKGR	74	
NTDB id 269 KZH43 RS08665 WP 001085462.1	.MAKKP....KKLEEISKKFGA	ERE	KALNDALKL	IEKD	FGKGSIMRLGER	.AEQKVQV	MSS	GSLALD	I	ALGSGGY	PKGR	73		
NTDB id 228 SPD RS09265 WP 001085462.1	.MAKKP....KKLEEISKKFGA	ERE	KALNDALKL	IEKD	FGKGSIMRLGER	.AEQKVQV	MSS	GSLALD	I	ALGSGGY	PKGR	73		
NTDB id 194 SPR RS08825 WP 001085462.1	.MAKKP....KKLEEISKKFGA	ERE	KALNDALKL	IEKD	FGKGSIMRLGER	.AEQKVQV	MSS	GSLALD	I	ALGSGGY	PKGR	73		
NTDB id 159 SP RS09750 WP 001085462.1	.MAKKP....KKLEEISKKFGA	ERE	KALNDALKL	IEKD	FGKGSIMRLGER	.AEQKVQV	MSS	GSLALD	I	ALGSGGY	PKGR	73		
NTDB id 499 SM12261 RS08315 WP 078228268.1	.MAKKP....KKLDEISKKFGA	ERE	KALNDALKL	IEKD	FGKGSIMRLGER	.AEQKVQV	MSS	GSLALD	I	ALGSGGY	PKGR	73		
NTDB id 527 SMSK321 RS11065 WP 001085454.1	.MAKKP....KKLDEISKKFGA	ERE	KALNDALKL	IEKD	FGKGSIMRLGER	.AEQKVQV	MSS	GSLALD	I	ALGSGGY	PKGR	73		
NTDB id 453 Spy49 1753c ACI62003.1	.MAKKL....KKNEEITKKFG	DERR	KALDDALKN	IEKD	FGKGA	V	MRLGER	.AEQKVQV	MSS	GSLALD	I	ALGAGGY	PKGR	73
NTDB id 408 SMU RS09530 WP 002262392.1	.MAKRI....KKTEEITKKFG	DERK	KALDDALKN	IEKD	FGKGA	V	MRLGER	.AEQKVQV	MSS	GSLALD	I	ALGAGGY	PKGR	73
NTDB id 115 BSU 16940 NP 389576.2	MSDRQAALDMALKQ	IEKQ	FGKGSIMKLGEK	.TDTRI	ST	VP	SGSLALD	T	ALGIGGY	PRGR	58			
NTDB id 625 LCA RS02525 WP 011374196.1	MAKDERQAALDAALKK	IEKN	FGKGSIMRMGEK	.VDTQV	ST	VSS	GSLALDEALGV	GGY	PRGR	60				
NTDB id 1313 DR RS12030 WP 010888966.1	MSKDATKEISAP	TDAKERS	KATETAMS	QIEKA	FGKGSIMKLGAE	.SKLDVQVV	ST	GSLSLDL	LALGV	GGI	PRGR	72		
NTDB id 1245 Cj1673c YP 002345041.1	MDDNKRKSLDAALKS	LDKT	FGKGTILRLGDK	.EVEQ	IDS	IGTGSVGLD	LALGI	GGV	PKGR	59				
NTDB id 1214 NCTC11637 00359 SQJ03206.1	MAIDEDKQKATISLA	IKQIDKV	FGKGALVRLGDK	.QVEK	IDA	IST	GSLSGLD	LALGI	GGV	PKGR	61			
NTDB id 1211 C694 RS00795 WP 000963128.1	MAIDEDKQKATISLA	IKQIDKV	FGKGALVRLGDK	.QVEK	IDS	IST	GSLSGLD	LALGI	GGV	PKGR	61			
NTDB id 1334 RAOC RS04870 WP 004918236.1	MAKT..ETTSPN	DDKKKALA	AVLEKLDKT	YGKGTVMKLG	DGTVDHNI	EV	IP	SGSLGLD	LALGV	GGY	PKGR	68		
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.MAENKKSSKNNTV..VKQVEP	E	QKKQALEA	AALQIEKQ	FGKGSIMKLGQT	.EQLDIES	VST	GSLSGLD	LALGI	GGL	PMGR	76		
NTDB id 1130 NGFG RS03960 WP 003688695.1	MSDDKS	KALAAALQIEKS	FGKGA	AIMKMDGS	QQUEEN	LEV	IST	GSLSGLD	LALGV	GGL	PRGR	60		
NTDB id 1124 NGFG RS03960 WP 003688695.1	MSDDKS	KALAAALQIEKS	FGKGA	AIMKMDGS	QQUEEN	LEV	IST	GSLSGLD	LALGV	GGL	PRGR	60		
NTDB id 1123 OK783 RS03845 WP 003688695.1	MSDDKS	KALAAALQIEKS	FGKGA	AIMKMDGS	QQUEEN	LEV	IST	GSLSGLD	LALGV	GGL	PRGR	60		
NTDB id 1427 RS RS02760 WP 011000510.1	.MED.....GK..KAASMSA	EKQ	KALAAALQIEKQ	FGKGSIMKMDA	.EVEPVQVV	ST	GSLSGLD	VALGV	GGL	PRGR	68			
NTDB id 149286 ACJ74 RS10505 WP 000963143.1	MAIDENKQKALAAALG	QIEKQ	FGKGSIMRLGED	.RSMDVET	IST	GSLSLD	I	ALGAGGL	PMGR	61				
NTDB id 1165 A1552VC RS01565 WP 000344154.1	MDENKQKALAAALG	QIEKQ	FGKGSIMRLGDN	.RAMDVET	IST	GSLSLD	I	ALGAGGL	PMGR	59				
NTDB id 1142 GTF74 RS11550 WP 000344154.1	MDENKQKALAAALG	QIEKQ	FGKGSIMRLGDN	.RAMDVET	IST	GSLSLD	I	ALGAGGL	PMGR	59				
NTDB id 1205 PSJM300 05545 AFN77183.1	MDENKKRALAAALG	QIEKQ	FGKGA	V	MRLMGD	H	DRQA	IPS	IST	GSLSGLD	I	ALGIGGL	PKGR	59
NTDB id 1022 ACIAD RS06390 WP 004925639.1	MDENKSKALQAALS	QIEKQ	FGKNTVMRLGDN	.TVQAVEAV	ST	GSLSLTLD	I	ALGIGGL	PKGR	59				
NTDB id 1074 ABD1 RS10195 WP 000344167.1	MDENKSKALQAALS	QIEKQ	FGKNTVMRLGDN	.TVQAVEAV	ST	GSLSLTLD	I	ALGIGGL	PKGR	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 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 149286 ACJ74 RS10505 WP 000963143.1
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

```

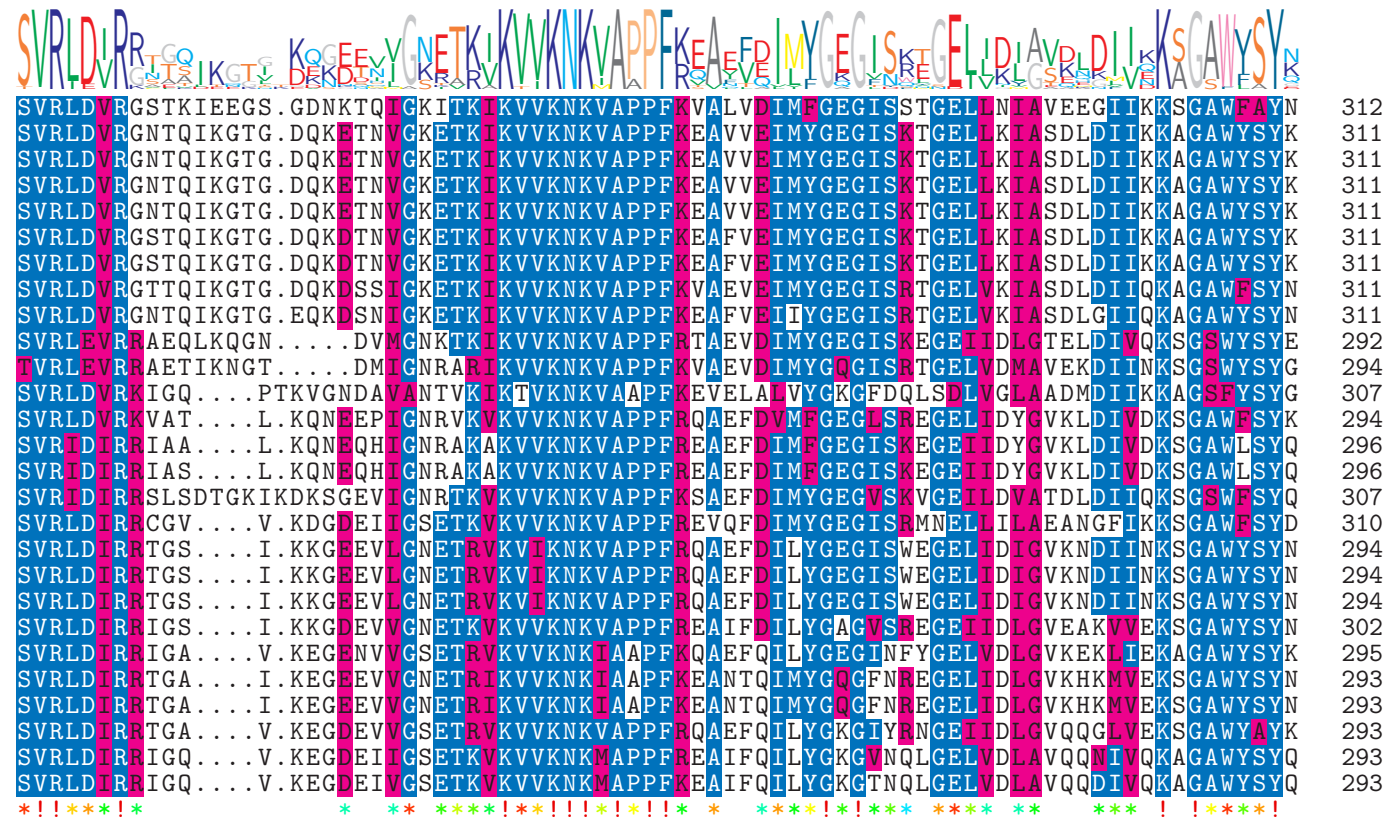


NTDB	id	600	KW2	RS01765	WP	011675413.1	VV	IDSVAAL	VP	KA	EID	GE	IGDSSVGLQAR	MS	QAMRKL	GA	CH	INKTKT	TT	A	IFINQLREK	V	GV	M	.	FG	SP	ETT	P	GG	R	AL	K	F	Y	A	233	
NTDB	id	269	KZH43	RS08665	WP	001085462.1	VV	DSVAAL	VP	RA	EID	GD	IGDSHVGLQAR	MS	QAMRKL	GA	SI	INKTKT	TT	A	IFINQLREK	V	GV	M	.	FG	NP	ETT	P	GG	R	AL	K	F	Y	A	232	
NTDB	id	228	SPD	RS09265	WP	001085462.1	VV	DSVAAL	VP	RA	EID	GD	IGDSHVGLQAR	MS	QAMRKL	GA	SI	INKTKT	TT	A	IFINQLREK	V	GV	M	.	FG	NP	ETT	P	GG	R	AL	K	F	Y	A	232	
NTDB	id	194	SPR	RS08825	WP	001085462.1	VV	DSVAAL	VP	RA	EID	GD	IGDSHVGLQAR	MS	QAMRKL	GA	SI	INKTKT	TT	A	IFINQLREK	V	GV	M	.	FG	NP	ETT	P	GG	R	AL	K	F	Y	A	232	
NTDB	id	159	SP	RS09750	WP	001085462.1	VV	DSVAAL	VP	RA	EID	GD	IGDSHVGLQAR	MS	QAMRKL	GA	SI	INKTKT	TT	A	IFINQLREK	V	GV	M	.	FG	NP	ETT	P	GG	R	AL	K	F	Y	A	232	
NTDB	id	499	SM12261	RS08315	WP	078228268.1	VV	DSVAAL	VP	RA	EID	GD	IGDSHVGLQAR	MS	QAMRKL	GA	SI	INKTKT	TT	A	IFINQLREK	V	GV	M	.	FG	NP	ETT	P	GG	R	AL	K	F	Y	A	232	
NTDB	id	527	SMSK321	RS11065	WP	001085454.1	VV	DSVAAL	VP	RA	EID	GD	IGDSHVGLQAR	MS	QAMRKL	GA	SI	INKTKT	TT	A	IFINQLREK	V	GV	M	.	FG	NP	ETT	P	GG	R	AL	K	F	Y	A	232	
NTDB	id	453	Spy49	1753c	ACI62003.1	VV	DSVAAL	VP	RA	EID	GD	IGDSHVGLQAR	MS	QAMRKL	SA	SI	INKTKT	TT	A	IFINQLREK	V	GV	M	.	FG	NP	ETT	P	GG	R	AL	K	F	Y	A	232		
NTDB	id	408	SMU	RS09530	WP	002262392.1	VV	DSVAAL	VP	RA	EID	GD	IGDSHVGLQAR	MS	QAMRKL	SA	SI	INKTKT	TT	A	IFINQLREK	V	GV	M	.	FG	NP	ETT	P	GG	R	AL	K	F	Y	S	232	
NTDB	id	115	BSU	16940	NP	389576.2	VV	DSVAAL	VP	KA	EIE	GD	MGDSHVGLQAR	LS	MSQALRKL	SG	AI	NSKT	IA	IFINQIREK	V	GV	M	.	FG	NP	ETT	P	GG	R	AL	K	F	Y	S	217		
NTDB	id	625	LCA	RS02525	WP	0011374196.1	L	V	DSVAAL	VP	RA	EIE	GE	MGD	A	HVGLQAR	LS	MSQALRKL	SGT	INKTKT	IA	IFINQIREK	V	GV	M	.	FG	NP	EV	TP	GG	R	AL	K	F	Y	S	219
NTDB	id	1313	DR	RS12030	WP	010888966.1	VV	DSVAAL	TP	RA	EIE	GE	MGDS	L	PGLQAR	LS	MSQALRKL	TA	ILSKTG	TAA	IFINQVREK	I	GV	M	.	Y	GN	PETT	T	GG	R	AL	K	F	Y	A	231	
NTDB	id	1245	Cj1673c	YP	002345041.1	L	V	DSVAAL	TP	KA	EIE	GE	MGD	Q	HVGLQAR	LS	MSQALRKL	TG	IVHKMNT	TV	IFINQIRMK	I	GA	MG	Y	GT	PETT	T	GG	N	AL	K	F	Y	A	219		
NTDB	id	1214	NCTC11637	00359	SQJ03206.1	VV	DSVAAL	TP	KA	EID	GE	MGD	Q	HVGLQAR	LS	MSHALRKL	IT	GV	LHKMNT	TL	IFINQIRMK	I	GM	MG	Y	GS	PETT	T	GG	N	AL	K	F	Y	A	221		
NTDB	id	1211	C694	RS00795	WP	000963128.1	VV	DSVAAL	TP	KA	EID	GE	MGD	Q	HVGLQAR	LS	MSHALRKL	IT	GV	LHKMNT	TL	IFINQIRMK	I	GM	MG	Y	GS	PETT	T	GG	N	AL	K	F	Y	A	221	
NTDB	id	1334	RAOC	RS04870	WP	004918236.1	VV	DSVAAL	TP	KA	EID	GE	MGDS	K	MGLHAR	LS	MSQALRKL	TSS	ISKTKCT	V	IFINQLRDK	I	GV															

```

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 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 149286 ACJ74 RS10505 WP 000963143.1
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 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 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 149286 ACJ74 RS10505 WP 000963143.1
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

```

Sequence	Score
DEKIGGGAEKAKNYLKEHQDVFEIDHKVRAAHGLDDSEVAETEEETTASKTAKAKKKEKAVETEEIELELED....	387
DEKIGQGSENAKKYLAEHPEIFDEIDKQVRSKFGGLIDGEEVSEQDTENKKDE...PKKEEA..VNEEVPLDLGDELEIE	385
DEKIGQGSENAKKYLAEHPEIFDEIDKQVRSKFGGLIDGEEVSEQDTENKKDE...PKKEEA..VNEEVPLDLGDELEIE	385
DEKIGQGSENAKKYLAEHPEIFDEIDKQVRSKFGGLIDGEEVSEQDTENKKDE...PKKEEA..VNEEVPLDLGDELEIE	385
DEKIGQGSENAKKYLAHNPEIFDEIDHQRVVFGLIDGEEIAES...KKDE...AAQVDS..VNEEVTLDLGDLEIE	381
DEKIGQGSENAKKYLAHNPEVFAEIDHQRVVFGLIDGEEAAES...KKDE...VAQVDS..VNEEVTLDLGDLEIE	381
GEKIGQGSENAKRYLADHPQLFDEIDRKVRVKFGLLEESEESAMAVASE.....E.....TDDLALDLNGIEIE	377
GEKIGQGSENAKKFLADNPEIFDDIDHKVRVQYGLIEEDNTEEKQSSKEK.....ETDEK..ADKNLVLELDDTIELE	382
EERLGGGRENAAKQFLKENKDIMLMIQEQUIREHYGLDNGGVVQQAEETQEEL.EFE.E.....	348
SERIGGGRENAAKNYLADHEDVEDEVRLKVRRAAYGISDVPEEDLPTTEDE.QI.NILPDDST....EE.....	355
DERIGGQKEKTIAYIAERPMEQEIRDRVMAAIRAGNAGEAPALAPAPAAPEAA...EA.....	363
DKKLGQGRENSKAFLENPEIADEITKATINSMGTIEGM.....ISGSEDDEG.....EE.....	343
DKKLGQGRENAKALLKEDKALADEITLKIKESIGSNEE....IMPLPDEPL.....EEME.....	347
DKKLGQGRENAKALLKEDKALADEITLKIKESIGSNEE....IMPLPDEPL.....EEME.....	347
DTKLGQGRDTPVKELIKDNPELAELEAKIREKLQAK.....	343
GTKIGQGKNNAVKWLKENPEIADKLEQIRNTLASNPN....SVLKATASDSN...DES.DVEEFSEEL	372
GAKIGGQKDNVRVWLKENPEISDEIDAKIRALNGVEMH....ITEG.....T...QDETGDGERPEE	348
GAKIGGQKDNVRVWLKENPEISDEIDAKIRALNGVEMH....ITEG.....T...QDETGDGERPEE	348
GAKIGGQKDNVRVWLKENPEISDEIDAKIRALNGVEMH....ITEG.....T...QDETGDGERPEE	348
GERIGGGRDNCREFLRNAAELAREIENKVRHGLVTPM.....GAVTLAEE.VE...ED.....	352
GEKIGGQKANATAWLKDNPETAKIEKKVRELLNSNP....STPDFSV..D..DSEGVATNEDF	353
GDKIGGQKANACKYLKENPEIAKTLDKKLREMLLNPN....MQLIAETSSAA..DDVEFGAVPEEF	354
GDKIGGQKANACKYLKENPEIAKTLDKKLREMLLNPN....MQLIAETSSAA..DDVEFGAVPEEF	354
GSKIGGQKANAAKYLEENPEIGQIEEQIRAKLLVTSA....NTKATPVAEDL..ADADI.....	347
GNKIGGQKNNVIRYLEENPQISTEIEAVIREQLLTKAS....DQTAA.HDETE...EEDPLLLES	349
GNKIGGQKNNVIRIFYENNQIAEIERNIEREQLLTGT....NGAVQ.I.EDE...EEDPLLLES	349

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 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 149286 ACJ74 RS10505 WP 000963143.1	...	353	
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