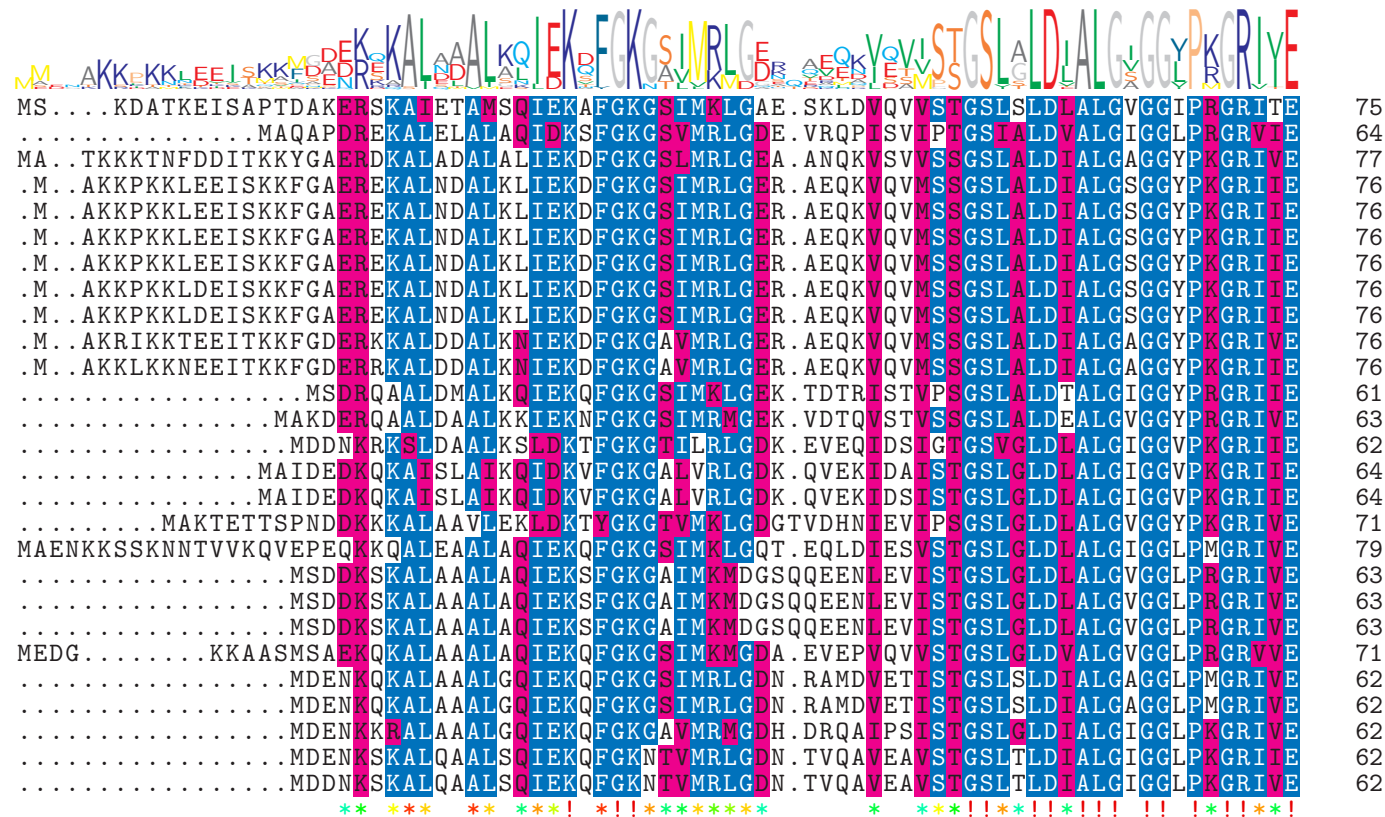


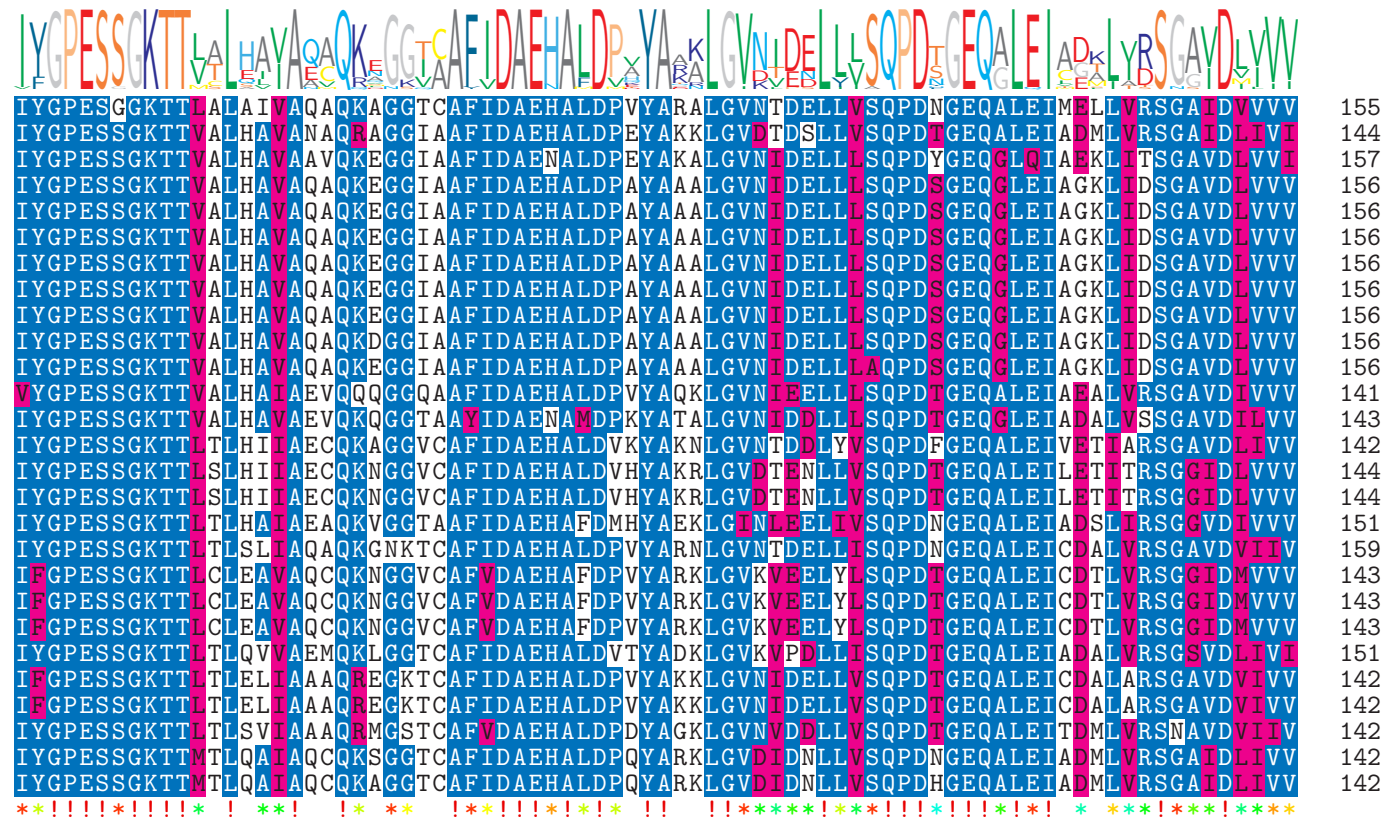
```

NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 67669 ACAM44 RS15430 WP 005057169.1
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 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 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 1205 PSJM300 05545 AFN77183.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
consensus

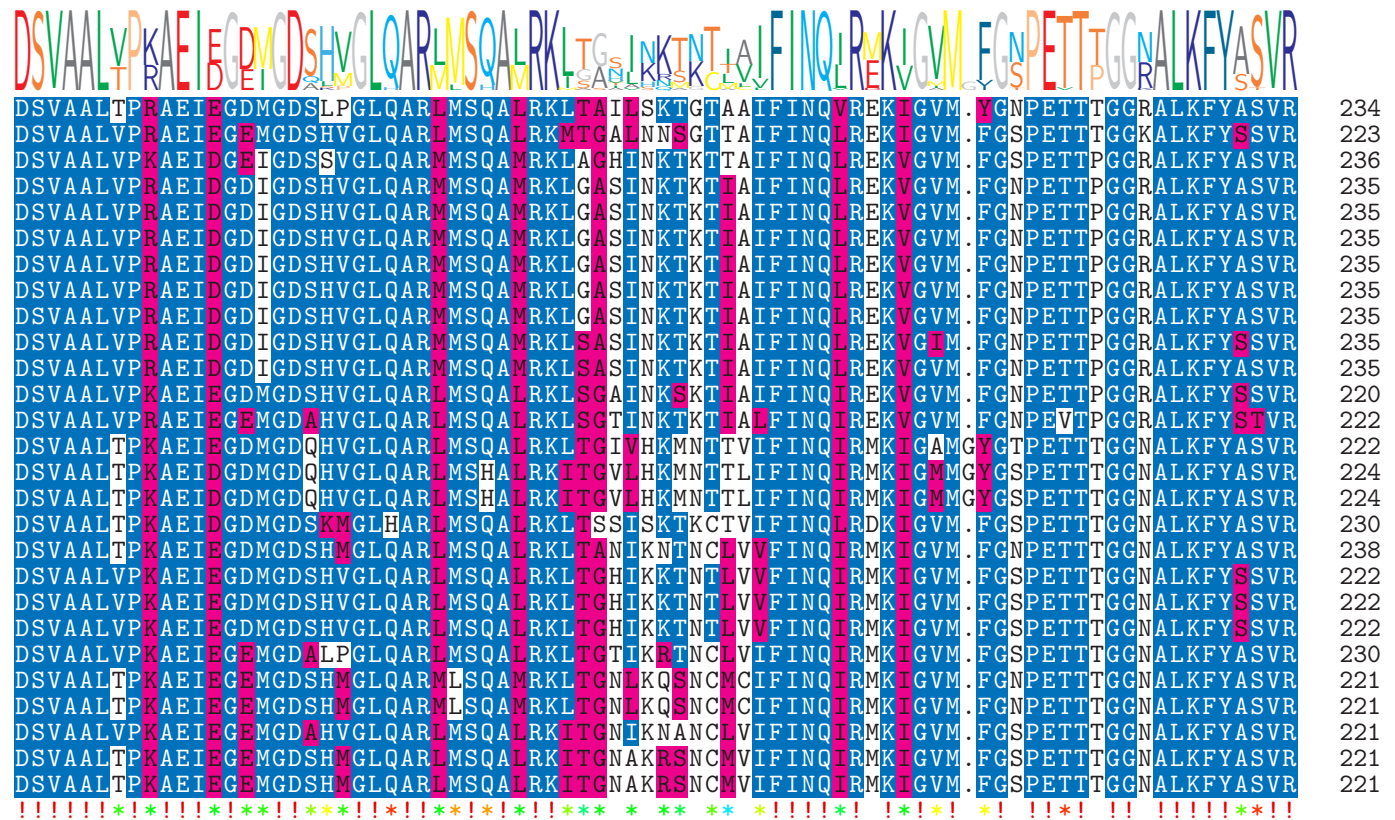
```



NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 67669 ACAM44 RS15430 WP 005057169.1
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 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1334 RA0C 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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
consensus



NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 67669 ACAM44 RS15430 WP 005057169.1
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 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1334 RA0C 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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
consensus



logo

NTDB id 1313 DR RS12030 WP 010888966.1	LDVRRIGQ...PTKVGND	AVANTV	IKTVKNKVA	APPFKE	VELAL	VYCGK	GFDQLS	DLVGL	AADM	DI	IKK	AGS	FYSY	GDER	310		
NTDB id 67669 ACAM44 RS15430 WP 005057169.1	LDVRR	IETLKDGT....	DAVGNR	TRVKVVKNKV	SPPFK	QAEFD	DILY	GKGIS	KEGSL	IDMG	VEQGF	IRK	SGS	WFTYE	GEQ 298		
NTDB id 600 KW2 RS01765 WP 011675413.1	LDVRG	STKIEEGS.GDN	KTIQ	IKITKIKVVKNKV	VAPPFK	VALVD	IMF	GEGIS	STGELL	NI	AVEEG	I	IKK	SGAWF	AYNDEK 315		
NTDB id 269 KZH43 RS08665 WP 001085462.1	LDVRG	NTQIKGTG.DQK	ETNVG	KETKIKVVKNKV	VAPPFKE	AVVE	EIMY	GEGIS	KTGELL	KIAS	DLDI	IKK	AGAW	YSYK	DEK 314		
NTDB id 228 SPD RS09265 WP 001085462.1	LDVRG	NTQIKGTG.DQK	ETNVG	KETKIKVVKNKV	VAPPFKE	AVVE	EIMY	GEGIS	KTGELL	KIAS	DLDI	IKK	AGAW	YSYK	DEK 314		
NTDB id 194 SPR RS08825 WP 001085462.1	LDVRG	NTQIKGTG.DQK	ETNVG	KETKIKVVKNKV	VAPPFKE	AVVE	EIMY	GEGIS	KTGELL	KIAS	DLDI	IKK	AGAW	YSYK	DEK 314		
NTDB id 159 SP RS09750 WP 001085462.1	LDVRG	NTQIKGTG.DQK	ETNVG	KETKIKVVKNKV	VAPPFKE	AVVE	EIMY	GEGIS	KTGELL	KIAS	DLDI	IKK	AGAW	YSYK	DEK 314		
NTDB id 499 SM12261 RS08315 WP 078228268.1	LDVRG	STQIKGTG.DQK	DTNVG	KETKIKVVKNKV	VAPPFKE	AFVE	EIMY	GEGIS	KTGELL	KIAS	DLDI	IKK	AGAW	YSYK	DEK 314		
NTDB id 527 SMSK321 RS11065 WP 001085454.1	LDVRG	STQIKGTG.DQK	DTNVG	KETKIKVVKNKV	VAPPFKE	AFVE	EIMY	GEGIS	KTGELL	KIAS	DLDI	IKK	AGAW	YSYK	DEK 314		
NTDB id 408 SMU RS09530 WP 002262392.1	LDVRG	NTQIKGTG.EQK	DSNIG	KETKIKVVKNKV	VAPPFKE	AFVE	EIMY	GEGIS	RTGEL	VKIAS	DLGI	I	QK	AGAW	YSYNGEK 314		
NTDB id 453 Spy49 1753c ACI62003.1	LDVRG	TTQIKGTG.DQK	DSSIG	KETKIKVVKNKV	VAPPFK	VAEVE	EIMY	GEGIS	RTGEL	VKIAS	DLDI	I	QK	AGAW	F	SYNGEK 314	
NTDB id 115 BSU 16940 NP 389576.2	LEVRR	AEQLKQGN....	DVMGN	KTKIKVVKNKV	VAPPFRT	AEVD	DIMY	GEGIS	KEGET	IIDL	GT	ELDI	VQK	SGS	W	SYSEER 295	
NTDB id 625 LCA RS02525 WP 011374196.1	LEVRR	AETIKNGT....	DMIGN	RAIKVVKNKV	VAPPFK	VAEVD	DIMY	GEGIS	RTGEL	VDMA	VEKDI	I	INK	SGS	W	SYSGSER 297	
NTDB id 1245 Cj1673c YP 002345041.1	LDVRK	VAT...L.KQNE	EP	IGNRVKVVKNKV	VAPPFR	QAEFD	DVMF	GEGIS	LSREGEL	IDYGV	KLDI	VD	DK	SGAW	F	SYKDKK 297	
NTDB id 1214 NCTC11637 00359 SQJ03206.1	IDIR	RIAA...L.KQNE	EQHIGN	RAKAKVVKNKV	VAPPFRAE	AEFD	DIMF	GEGIS	KEGET	IIDYGV	KLDI	VD	DK	SGAW	L	SYQDKK 299	
NTDB id 1211 C694 RS00795 WP 000963128.1	IDIR	RIAS...L.KQNE	EQHIGN	RAKAKVVKNKV	VAPPFRAE	AEFD	DIMF	GEGIS	KEGET	IIDYGV	KLDI	VD	DK	SGAW	L	SYQDKK 299	
NTDB id 1334 RAOC RS04870 WP 004918236.1	IDIR	RSLSDTGKIKDKS	GEVIGN	RTKVVVKNKV	VAPPFK	SAEFD	DIMY	GEGIS	VSKVGE	ILDV	ATDL	DI	I	QKSGS	W	F	SYQDTK 310
NTDB id 1389 A4U84 RS07560 WP 021112712.1	LDIR	RCGV...V.KDG	DEIIG	SETKVVVKNKV	VAPPFREV	QFQ	DIMY	GEGIS	RMNELL	LILAE	ANGF	I	IKK	SGAW	F	SYDGTK 313	
NTDB id 1130 NGFG RS03960 WP 003688695.1	LDIR	RTGS...I.KKG	EEVLGN	ETRVKVIKNKV	VAPPFR	QAEFD	DILY	GEGIS	WEGEL	IDIG	VKNDI	INK	SGAW	YSYNG	AK 297		
NTDB id 1124 NGFG RS03960 WP 003688695.1	LDIR	RTGS...I.KKG	EEVLGN	ETRVKVIKNKV	VAPPFR	QAEFD	DILY	GEGIS	WEGEL	IDIG	VKNDI	INK	SGAW	YSYNG	AK 297		
NTDB id 1123 OK783 RS03845 WP 003688695.1	LDIR	RTGS...I.KKG	EEVLGN	ETRVKVIKNKV	VAPPFR	QAEFD	DILY	GEGIS	WEGEL	IDIG	VKNDI	INK	SGAW	YSYNG	AK 297		
NTDB id 1427 RS RS02760 WP 011000510.1	LDIR	RIGS...I.KKG	DEVVGN	ETKVVVKNKV	VAPPFRAE	AI	FDILY	GAGV	SREGE	IIDL	GV	EAKV	VEK	SGAW	YSYNGER 305		
NTDB id 1165 A1552VC RS01565 WP 000344154.1	LDIR	RTGA...I.KEG	EEVVGNET	RIKVVKNKI	AAPFKE	ANTQ	QIMY	GQGF	NREGEL	IDLG	VKHKM	VEK	SGAW	YSYNG	DK 296		
NTDB id 1142 GTF74 RS11550 WP 000344154.1	LDIR	RTGA...I.KEG	EEVVGNET	RIKVVKNKI	AAPFKE	ANTQ	QIMY	GQGF	NREGEL	IDLG	VKHKM	VEK	SGAW	YSYNG	DK 296		
NTDB id 1205 PSJM300 05545 AFN77183.1	LDIR	RTGA...V.KEG	DEVVGS	ETRVKVVKNKV	VAPPFR	QAEFQ	ILY	GKG	IYRN	GEI	IDLG	VQGL	VEK	SGAW	YAYK	GSK 296	
NTDB id 1074 ABD1 RS10195 WP 000344167.1	LDIR	RIGQ...V.KEG	DEIVGS	ETKVVVKNKM	APPFKE	AI	QILY	GKG	TNQL	GELVD	LAVQQ	DI	VQK	AGAW	YSYQGNK 296		
NTDB id 1022 ACIAD RS06390 WP 004925639.1	LDIR	RIGQ...V.KEG	DEIVGS	ETKVVVKNKM	APPFRE	AI	QILY	GKG	VNQL	GELVD	LAVQQ	NI	VQK	AGAW	YSYQGNK 296		
consensus	***!*		*	**	*****!*****!*	*	*****!*****	*****	***	***	! !*****!	*					

logo

NTDB id 1313 DR RS12030 WP 010888966.1	IGQGKEKTIAYIAERPMEQEIRDRVMAAIRAGNAGEAPALAPAPAA.....PEAAEA.....	363
NTDB id 67669 ACAM44 RS15430 WP 005057169.1	LGQGGKENARNFLLENVVDVANEIEKKIKKELGIGAVLTDDEVVPAPV....DF.....	346
NTDB id 600 KW2 RS01765 WP 011675413.1	IGQGAEKAKNYLKEHQDVDFEIDHKVRAAHGLDDSEVAETEEETTASKTAKAKKEEKAVETEEIELELED.....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	IGQGSENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIEIEE	388
NTDB id 228 SPD RS09265 WP 001085462.1	IGQGSENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIEIEE	388
NTDB id 194 SPR RS08825 WP 001085462.1	IGQGSENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIEIEE	388
NTDB id 159 SP RS09750 WP 001085462.1	IGQGSENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIEIEE	388
NTDB id 499 SM12261 RS08315 WP 078228268.1	IGQGSENAKKYLADNPEIFDEIDHQVRVQFGLIDGEEIAES....KKDE....AAQVDS..VNEEVTLDLGDELEIEIEE	384
NTDB id 527 SMSK321 RS11065 WP 001085454.1	IGQGSENAKKYLADNPEVFAEIDHQVRVQFGLIDGEEAAES....KKDE....VAQVDS..VNEEVTLDLGDELEIEIEE	384
NTDB id 408 SMU RS09530 WP 002262392.1	IGQGSENAKKFLADNPEIFDDIDHKVVRVQYGLIEEDNTEEKQSSKEK.....ETDEK..ADKNLVLELDDTIELED..	383
NTDB id 453 Spy49 1753c ACI62003.1	IGQGSENAKRYLADHPQLFDEIDRKVRVKFGLLEESEEEESAMAVASE.....E.....TDDLALDLNNGIEIED..	378
NTDB id 115 BSU 16940 NP 389576.2	LGQGGRENAKQFLKENKDIMLMIQEQIREHYGLDNNGVVQQQAEETQEEL.EFE.E.....	348
NTDB id 625 LCA RS02525 WP 011374196.1	IGQGGRENAKNYLADHEDVEDEVRLKVRAAYGISDVPEEDLPTTEDE.QI.NILPDDST.....EE.....	355
NTDB id 1245 Cj1673c YP 002345041.1	LGQGGRENSKAFLENPEIADEITKAIQNSMGIEGMISGSEDDE..GEE.....	343
NTDB id 1214 NCTC11637 00359 SQJ03206.1	LGQGGRENAKALLKEDKALADEITLTIKESIGSNEEIMPLPDEP..LEEM.E.....	347
NTDB id 1211 C694 RS00795 WP 000963128.1	LGQGGRENAKALLKEDKALADEITLTIKESIGSNEEIMPLPDEP..LEEM.E.....	347
NTDB id 1334 RAOC RS04870 WP 004918236.1	LGQGRDITVKELTKDNPELAELEIAKIREKLQAK.....	343
NTDB id 1389 A4U84 RS07560 WP 021112712.1	IGQGGKNNAVKWLENPEIADKLEQEIRNTLASNPNSVLKATASDSNDES.DVEEF.....SEEEL.....	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	IGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHITEGTQDET.....DGER.....PEE.....	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	IGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHITEGTQDET.....DGER.....PEE.....	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	IGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHITEGTQDET.....DGER.....PEE.....	348
NTDB id 1427 RS RS02760 WP 011000510.1	IGQGRDNCREFLRENAELAREIENKVREHLGVTPMGAVTLA.EEVEED.....	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	IGQGGKANACKYLLKENPEIAKTLDKKLREMLLNPNENMQLIAETSSAADDV.EFGAV.....PEEF.....	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	IGQGGKANACKYLLKENPEIAKTLDKKLREMLLNPNENMQLIAETSSAADDV.EFGAV.....PEEF.....	354
NTDB id 1205 PSJM300 05545 AFN77183.1	IGQGGKANAAKYLEENPEIGQEIEQQIRAKLLVTSANTKATPVAEDLADA.D..I.....	347
NTDB id 1074 ABD1 RS10195 WP 000344167.1	IGQGGKNNVIRYFEENNQIAEEIERNIREQLLTTGTNGAVQ.I.EDEEEP.D..LL.....LES.....	349
NTDB id 1022 ACIAD RS06390 WP 004925639.1	IGQGGKNNVIRYLEENPQISTEIEAVIREQLLTKASDQTAA.HDETEEEP.D..LL.....ES.....	349
consensus	*!!!!***** ** ***** ***** ** *	

- ☒ non conserved
- ☒ similar
- ☒ ≥ 50% conserved