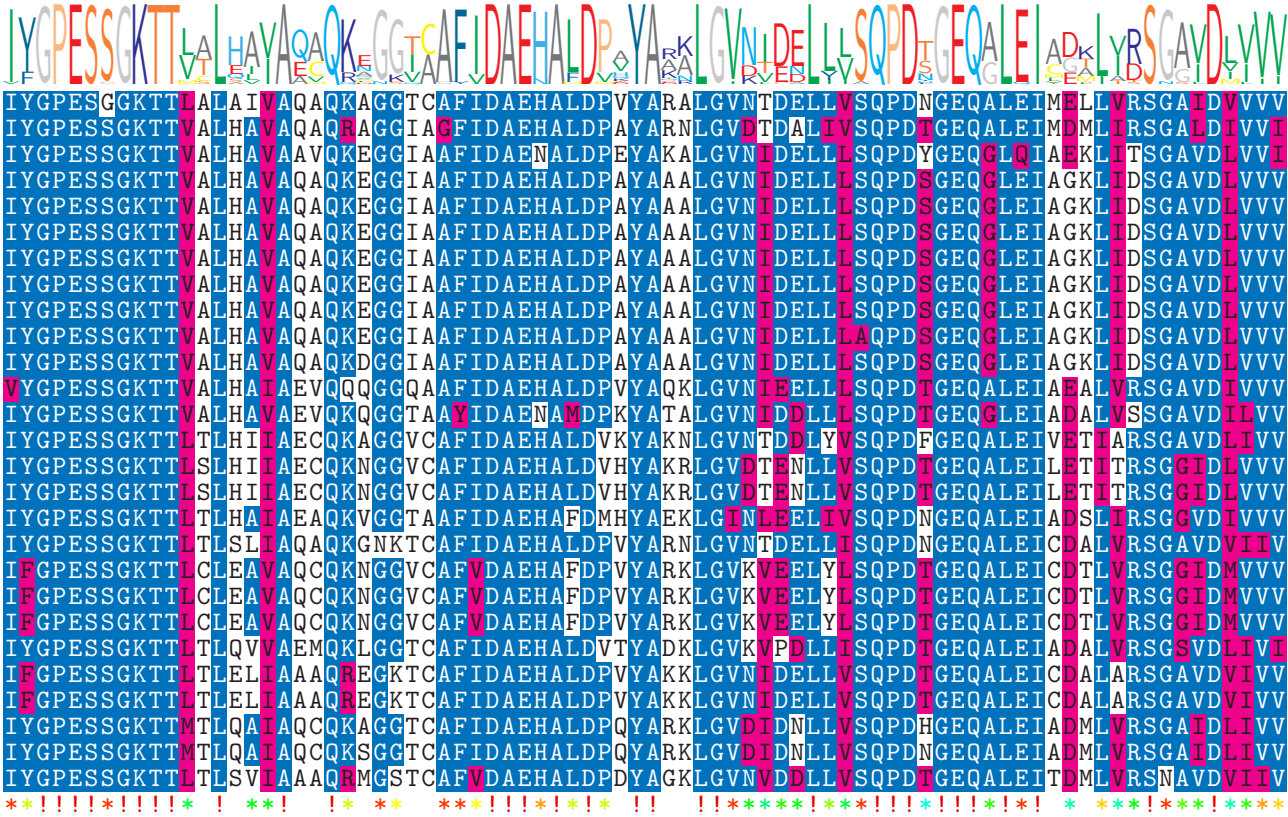


logo

NTDB id 1313 DR RS12030 WP 010888966.1	MS....KDATKEISAPTDAKERSKATETAMSQIEKAFGKGSIMKLGAE.SKLDVQVVSTGSLSLDLALGVGGIPRGRITE	75
NTDB id 331256 EJ069 RS00360 WP 126037695.1	MAAKSDDRQKALDTALAQIDRQFGKGSIMRLGDQ.AAQKVVKVPTGVSVALDVALGIGGLPRGRVVE	65
NTDB id 600 KW2 RS01765 WP 011675413.1	MA..TKKKTNFDDITKKYGAERDKALADALALIEKDFGKGSIMRLGEA.ANQKVSVVSSGSLALDIALGAGGYPKGRIVE	77
NTDB id 269 KZH43 RS08665 WP 001085462.1	.M..AKKPKKLEEISKKFGEEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRITE	76
NTDB id 228 SPD RS09265 WP 001085462.1	.M..AKKPKKLEEISKKFGEEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRITE	76
NTDB id 194 SPR RS08825 WP 001085462.1	.M..AKKPKKLEEISKKFGEEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRITE	76
NTDB id 159 SP RS09750 WP 001085462.1	.M..AKKPKKLEEISKKFGEEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRITE	76
NTDB id 527 SMSK321 RS11065 WP 001085454.1	.M..AKKPKKLDEISKKFGEEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRITE	76
NTDB id 499 SM12261 RS08315 WP 078228268.1	.M..AKKPKKLDEISKKFGEEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRITE	76
NTDB id 453 Spy49 1753c ACI62003.1	.M..AKKLKKNEEITKKFGERRRKALDDALKNIEKDFGKGAVMRLGER.AEQKVQVMSSGSLALDIALGAGGYPKGRITE	76
NTDB id 408 SMU RS09530 WP 002262392.1	.M..AKRIKKTTEEITKKFGERKKALDDALKNIEKDFGKGAVMRLGER.AEQKVQVMSSGSLALDIALGAGGYPKGRIVE	76
NTDB id 115 BSU 16940 NP 389576.2	MSDRQAALDMALKQIEKQFGKGSIMKLGKEK.TDTRISTVPSGSLALDTALGIGGYPRGRITE	61
NTDB id 625 LCA RS02525 WP 011374196.1	MAKDERQAALDAALKKIEKNFGKGSIMRMGEK.VDTQVSTVSSGSLALDEALGVGGYPRGRIVE	63
NTDB id 1245 Cj1673c YP 002345041.1	MDNKRKSLDAALKSLDKTFGKGTILRLGDK.EVEQIDSIGTGSVGLDLALGIGGVPKGRITE	62
NTDB id 1211 C694 RS00795 WP 000963128.1	MAIDEDKQKATSLATKQIDKVFGKGALVRLGDK.QVEKIDSISTGSLGLDLALGIGGVPKGRITE	64
NTDB id 1214 NCTC11637 00359 SQJ03206.1	MAIDEDKQKATSLATKQIDKVFGKGALVRLGDK.QVEKIDAISTGSLGLDLALGIGGVPKGRITE	64
NTDB id 1334 RAOC RS04870 WP 004918236.1	MAKTETTSPNDDKKKALAAVLEKLDKTYGKGTVMKLGDDGTVDHNIIEVIPSGSLGLDLALGVGGYPKGRIVE	71
NTDB id 1389 A4U84 RS07560 WP 021112712.1	MAENKKSSKNNTTVVKQVEPEQKKQALEAALAQIEKQFGKGSIMKLGQT.EQLDIESVSTGSLGLDLALGIGGLPMGRIVE	79
NTDB id 1130 NGFG RS03960 WP 003688695.1	MSDDKSKALAAALAQIEKSFKGGAIMKMDGSQQEENLEVISTGSLGLDLALGVGGLPRGRIVE	63
NTDB id 1124 NGFG RS03960 WP 003688695.1	MSDDKSKALAAALAQIEKSFKGGAIMKMDGSQQEENLEVISTGSLGLDLALGVGGLPRGRIVE	63
NTDB id 1123 OK783 RS03845 WP 003688695.1	MSDDKSKALAAALAQIEKSFKGGAIMKMDGSQQEENLEVISTGSLGLDLALGVGGLPRGRIVE	63
NTDB id 1427 RS RS02760 WP 011000510.1	MEDG.....KKAASMSAEKQKALAAALAQIEKQFGKGSIMKMGDA.EVEPVQVVSTGSLGLDVALGVGGLPRGRVVE	71
NTDB id 1165 A1552VC RS01565 WP 000344154.1	MDENKQKALAAALGQIEKQFGKGSIMRLGDN.RAMDVETISTGSLSLDIALGAGGLPMGRIVE	62
NTDB id 1142 GTF74 RS11550 WP 000344154.1	MDENKQKALAAALGQIEKQFGKGSIMRLGDN.RAMDVETISTGSLSLDIALGAGGLPMGRIVE	62
NTDB id 1022 ACIAD RS06390 WP 004925639.1	MDNKSALQAALSQIEKQFGKNTVMRLGDN.TVQAVEAVSTGSLTLDIALGIGGLPKGRIVE	62
NTDB id 1074 ABD1 RS10195 WP 000344167.1	MDENKSKALQAALSQIEKQFGKNTVMRLGDN.TVQAVEAVSTGSLTLDIALGIGGLPKGRITE	62
NTDB id 1205 PSJM300 05545 AFN77183.1	MDENKKRALAAALGQIEKQFGKGAVMRMGDH.DRQAIPSIISTGSLGLDIALGIGGLPKGRIVE	62
consensus	*** ** *	

logo

NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 331256 EJ069 RS00360 WP 126037695.1
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 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 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 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

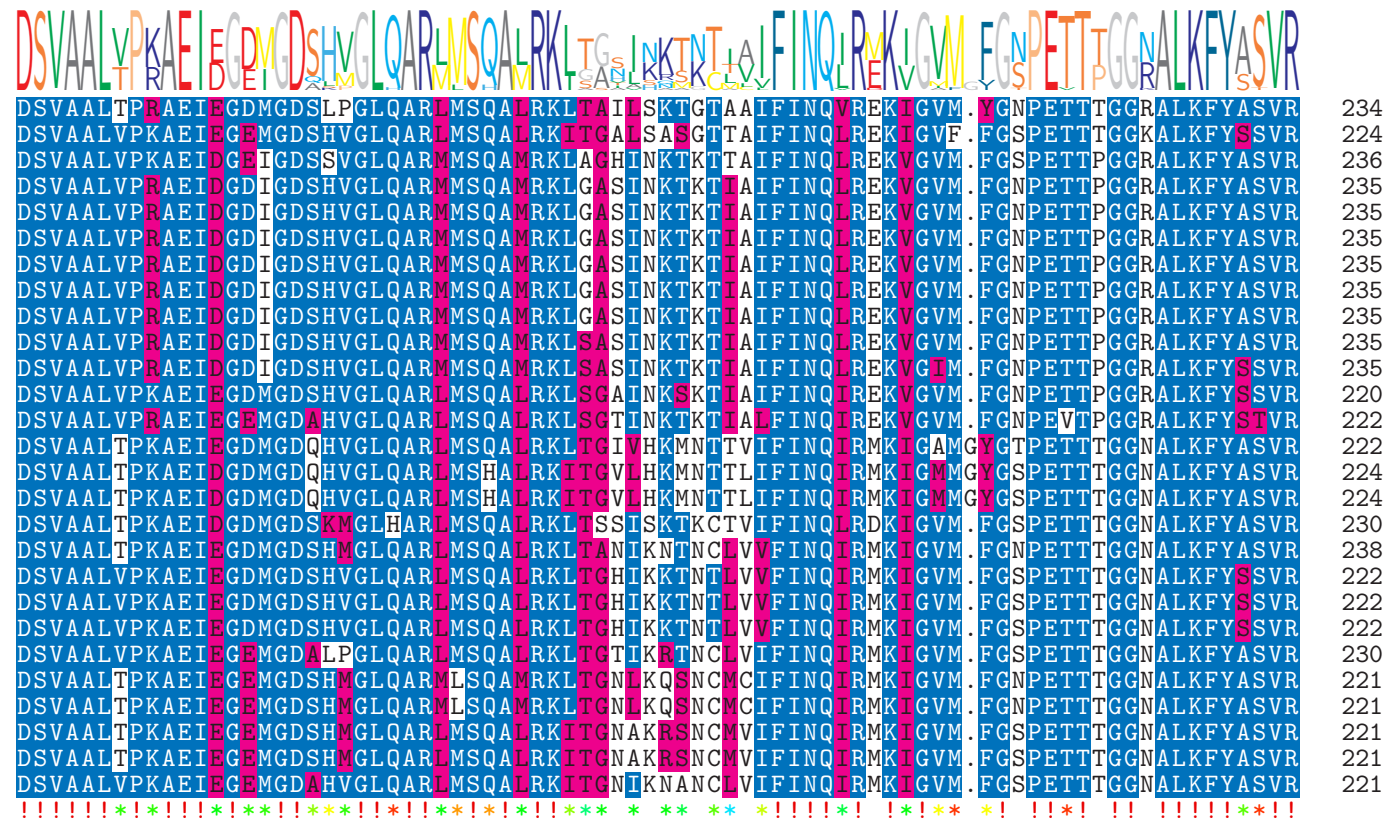


155
145
157
156
156
156
156
156
156
156
156
141
143
142
144
144
151
159
143
143
143
151
142
142
142
142
142

```

NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 331256 EJU69 RS00360 WP 126037695.1
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 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 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 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

```



logo

NTDB id 1313 DR RS12030 WP 010888966.1	LDVRRIGQ...PTKVGND	AVANTV	IKTVKNKVA	APFKE	VELAL	VYGKG	FDQLS	DLVGL	AADMD	ITKKAG	SFYSY	GDER	310									
NTDB id 331256 EJ069 RS00360 WP 126037695.1	LDVRRRIETLKEAG....SP	IGNRTR	VKVVKNK	MAPPF	KQAEF	DIMYGK	GISREG	SLIDM	GVNDG	IVRKSG	AWFTY	EGEQ	299									
NTDB id 600 KW2 RS01765 WP 011675413.1	LDVRGSTKIEEGS.GDNKT	QIGKIT	IKVVKNK	VAPPF	KVALV	DIMFG	EGISST	GELLN	IAVEEG	IIKKSG	AWFAYN	DEK	315									
NTDB id 269 KZH43 RS08665 WP 001085462.1	LDVRGNTQIKGTG.DQKET	NVGKET	IKVVKNK	VAPPF	KEAVV	EIMYG	GEGIS	KTGELL	KIASDL	DIKKAG	AWYSY	KDEK	314									
NTDB id 228 SPD RS09265 WP 001085462.1	LDVRGNTQIKGTG.DQKET	NVGKET	IKVVKNK	VAPPF	KEAVV	EIMYG	GEGIS	KTGELL	KIASDL	DIKKAG	AWYSY	KDEK	314									
NTDB id 194 SPR RS08825 WP 001085462.1	LDVRGNTQIKGTG.DQKET	NVGKET	IKVVKNK	VAPPF	KEAVV	EIMYG	GEGIS	KTGELL	KIASDL	DIKKAG	AWYSY	KDEK	314									
NTDB id 159 SP RS09750 WP 001085462.1	LDVRGNTQIKGTG.DQKET	NVGKET	IKVVKNK	VAPPF	KEAVV	EIMYG	GEGIS	KTGELL	KIASDL	DIKKAG	AWYSY	KDEK	314									
NTDB id 527 SMSK321 RS11065 WP 001085454.1	LDVRGSTQIKGTG.DQK	DTNVG	KETKIK	VVKNKV	VAPPF	KEAFV	EIMYG	GEGIS	KTGELL	KIASDL	DIKKAG	AWYSY	KDEK	314								
NTDB id 499 SM12261 RS08315 WP 078228268.1	LDVRGSTQIKGTG.DQK	DTNVG	KETKIK	VVKNKV	VAPPF	KEAFV	EIMYG	GEGIS	KTGELL	KIASDL	DIKKAG	AWYSY	KDEK	314								
NTDB id 453 Spy49 1753c ACI62003.1	LDVRGTTQIKGTG.DQK	DSSIG	KETKIK	VVKNKV	VAPPF	KVAEV	EIMYG	GEGIS	RTGEL	VKIASDL	DIQKAG	AWFSY	NGEK	314								
NTDB id 408 SMU RS09530 WP 002262392.1	LDVRGNTQIKGTG.EQK	DSNIG	KETKIK	VVKNKV	VAPPF	KEAFV	EIIYG	GEGIS	RTGEL	VKIASDL	GIQKAG	AWFSY	NGEK	314								
NTDB id 115 BSU 16940 NP 389576.2	LEVRRAEQLKQGN....D	VMGNK	TKIK	VVKNKV	VAPPF	RTAEV	DIMYG	GEGIS	KEGET	IIDLG	TELDI	VQKSG	SWSY	EEER	295							
NTDB id 625 LCA RS02525 WP 011374196.1	LEVRRAETIKNGT....DM	IGNRARI	KVVKNK	VAPPF	KVAEV	DIMY	GQGIS	RTGEL	VDMA	VEKDI	INKSG	SWSY	GSE	R	297							
NTDB id 1245 Cj1673c YP 002345041.1	LDVRKVAT...L.KQNE	EPIGNR	VKVVK	VKNKV	VAPPF	RQAEF	DVMF	GEG	LSREG	ELIDY	GVKL	DIVDK	SGAW	FSY	KDKK	297						
NTDB id 1211 C694 RS00795 WP 000963128.1	IDIRRIAS...L.KQNE	EQHIGNRA	KAKVVK	VKNKV	VAPPF	REAEF	DIMF	GEGIS	KEGET	IIDY	GVKL	DIVDK	SGAW	LSY	QDKK	299						
NTDB id 1214 NCTC11637 00359 SQJ03206.1	IDIRRIAA...L.KQNE	EQHIGNRA	KAKVVK	VKNKV	VAPPF	REAEF	DIMF	GEGIS	KEGET	IIDY	GVKL	DIVDK	SGAW	LSY	QDKK	299						
NTDB id 1334 RAOC RS04870 WP 004918236.1	IDIRRSLSDTGKIKDKS	GEVIGNR	TKVK	VVKNK	VAPPF	KSAEF	DIMYG	GEG	VSKV	GEILD	VATDL	DI	IQKSG	SW	FSY	QDTK	310					
NTDB id 1389 A4U84 RS07560 WP 021112712.1	LDIRRCGV...V.KDG	DEIIGSET	KVKV	VKNKV	VAPPF	REVQF	DIMYG	GEGIS	RMNELL	ILAE	ANGFI	IKKSG	AW	FSY	DG	TK	313					
NTDB id 1130 NGFG RS03960 WP 003688695.1	LDIRRTGS...I.KKG	EEVLGN	ETRVK	VVKNK	VAPPF	RQAEF	DILY	GEGIS	WEGEL	IDIGV	KNDI	INKSG	AW	YSY	NG	AK	297					
NTDB id 1124 NGFG RS03960 WP 003688695.1	LDIRRTGS...I.KKG	EEVLGN	ETRVK	VVKNK	VAPPF	RQAEF	DILY	GEGIS	WEGEL	IDIGV	KNDI	INKSG	AW	YSY	NG	AK	297					
NTDB id 1123 OK783 RS03845 WP 003688695.1	LDIRRTGS...I.KKG	EEVLGN	ETRVK	VVKNK	VAPPF	RQAEF	DILY	GEGIS	WEGEL	IDIGV	KNDI	INKSG	AW	YSY	NG	AK	297					
NTDB id 1427 RS RS02760 WP 011000510.1	LDIRRIGS...I.KKG	DEVVGN	ETKV	VVKNK	VAPPF	REAI	FQILY	GAGV	SREGE	IIDLG	VEAK	VVEK	SG	AW	YSY	NG	R	305				
NTDB id 1165 A1552VC RS01565 WP 000344154.1	LDIRRTGA...I.KEG	EEVVGNET	RIKVV	VKNK	IAAP	FKEAN	TQIMY	GQGF	NREG	ELID	GVKHK	MVEK	SG	AW	YSY	NG	D	K	296			
NTDB id 1142 GTF74 RS11550 WP 000344154.1	LDIRRTGA...I.KEG	EEVVGNET	RIKVV	VKNK	IAAP	FKEAN	TQIMY	GQGF	NREG	ELID	GVKHK	MVEK	SG	AW	YSY	NG	D	K	296			
NTDB id 1022 ACIAD RS06390 WP 004925639.1	LDIRRIIGQ...V.KEG	DEIIGSET	KVKV	VVKNK	MAPPF	REAI	FQILY	GKGN	QLGEL	VDLAV	QQNIV	QKAG	AW	YSY	Q	GN	K	296				
NTDB id 1074 ABD1 RS10195 WP 000344167.1	LDIRRIIGQ...V.KEG	DEIIGSET	KVKV	VVKNK	MAPPF	REAI	FQILY	GKGN	QLGEL	VDLAV	QQNIV	QKAG	AW	YSY	Q	GN	K	296				
NTDB id 1205 PSJM300 05545 AFN77183.1	LDIRRTGA...V.KEG	DEVVGS	ETRVK	VVKNK	VAPPF	RQAEF	ILY	GKGI	YRNGE	IIDLG	VQQGL	DIV	EK	SG	AW	Y	AY	K	G	S	K	296
consensus	***!*	*	**	*****!*****!*****!*	*	*****!*****!*****!*	*	*****!*****!*****!*	*	*****!*****!*****!*	*	*****!*****!*****!*	*									

logo

NTDB id 1313 DR RS12030 WP 010888966.1	IGQGKEKTIAYIAERPEMEQEIRDRVMAAIRAGNAGEAPALAPAPAA.....PEAAEA.....	363
NTDB id 331256 EJ069 RS00360 WP 126037695.1	LGQGKEKARAYLAENTDTASEIEQKILEKLGTGEYADVPSADSPDAM.....ADESVPADF.....	355
NTDB id 600 KW2 RS01765 WP 011675413.1	IGQGAEKAKNYLKEHQDVFEIDHKVRAAHGLDDSEVAETEETTASKTAKAKKEEKAVETEEIELELED.....	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 527 SMSK321 RS11065 WP 001085454.1	IGQGSENAKKYLADNPEVFAEIDHQVRVQFGLIDGEEAAE....SKKDE....VAQVDS..VNEEVTLDLGDELEIEIEE	384
NTDB id 499 SM12261 RS08315 WP 078228268.1	IGQGSENAKKYLADNPEIFDEIDHQVRVQFGLIDGEEIAE....SKKDE....AAQVDS..VNEEVTLDLGDELEIEIEE	384
NTDB id 453 Spy49 1753c ACI62003.1	IGQGSENAKRYLADHPQLFDEIDRKVRVKFGLLEESEESAMAVASE.....E.....TDDLALDLNNGIEIED..	378
NTDB id 408 SMU RS09530 WP 002262392.1	IGQGSENAKKFLADNPEIFDDIDHKVRVQYGLIEEDNTEEKQSSKEK.....ETDEK..ADKNLVLELDDTIELED..	383
NTDB id 115 BSU 16940 NP 389576.2	LGQGGRENAKQFLKENKDIMLMIQEQIREHYGLDNGGVVQQQAEETQEEL.EFE.E.....	348
NTDB id 625 LCA RS02525 WP 011374196.1	IGQGGRENAKNYLADHEDVEDEVRLKVRAAYGISDVPEEDLPTTEDE.QI.NILPDDST.....EE.....	355
NTDB id 1245 Cj1673c YP 002345041.1	LGQGGRENSKAFLENPEIADEITKAIQNSMGIEGMISGSEDD..EGEE.....	343
NTDB id 1211 C694 RS00795 WP 000963128.1	LGQGGRENAKALLKEDKALADEITLTIKESIGSNEEIMPLPDE..PLEEM.E.....	347
NTDB id 1214 NCTC11637 00359 SQJ03206.1	LGQGGRENAKALLKEDKALADEITLTIKESIGSNEEIMPLPDE..PLEEM.E.....	347
NTDB id 1334 RAOC RS04870 WP 004918236.1	LGQGRDRTVKELTKDNPELAEELEAKIREKLQAK.....	343
NTDB id 1389 A4U84 RS07560 WP 021112712.1	IGQGGKNNAVKWLENPEIADKLEQEIRNTLASNPNSVLKATASDSNDES.DVEEF.....SEEL.....	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	IGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHITEGTQDETGDGER.....PEE.....	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	IGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHITEGTQDETGDGER.....PEE.....	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	IGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHITEGTQDETGDGER.....PEE.....	348
NTDB id 1427 RS RS02760 WP 011000510.1	IGQGRDNCREFLRENAELAREIENKVREHLGVTPMGAVTLA.EEVEED.....	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	IGQGGKANACKYLLKENPEIAKTLDKKLREMLLNPNMQLIAETSSAADDV.EFGAV.....PEEF.....	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	IGQGGKANACKYLLKENPEIAKTLDKKLREMLLNPNMQLIAETSSAADDV.EFGAV.....PEEF.....	354
NTDB id 1022 ACIAD RS06390 WP 004925639.1	IGQGGKNNVIRYLEENPQISTEIEAVIREQLLTKASDQTAA.HDETEEEP.DLL.....ES.....	349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	IGQGGKNNVIRYFEENNQIAEEIERNIREQLLTTGTNGAVQ.I.EDEEEP.DLL.....LES.....	349
NTDB id 1205 PSJM300 05545 AFN77183.1	IGQGGKANAAKYLENPEIGQEIEQQIRAKLLVTSANTKATPVAEDLADA.DI.....	347
consensus	*!!!!***** ** ***** ***** ** *	

- non conserved
- similar
- ≥ 50% conserved