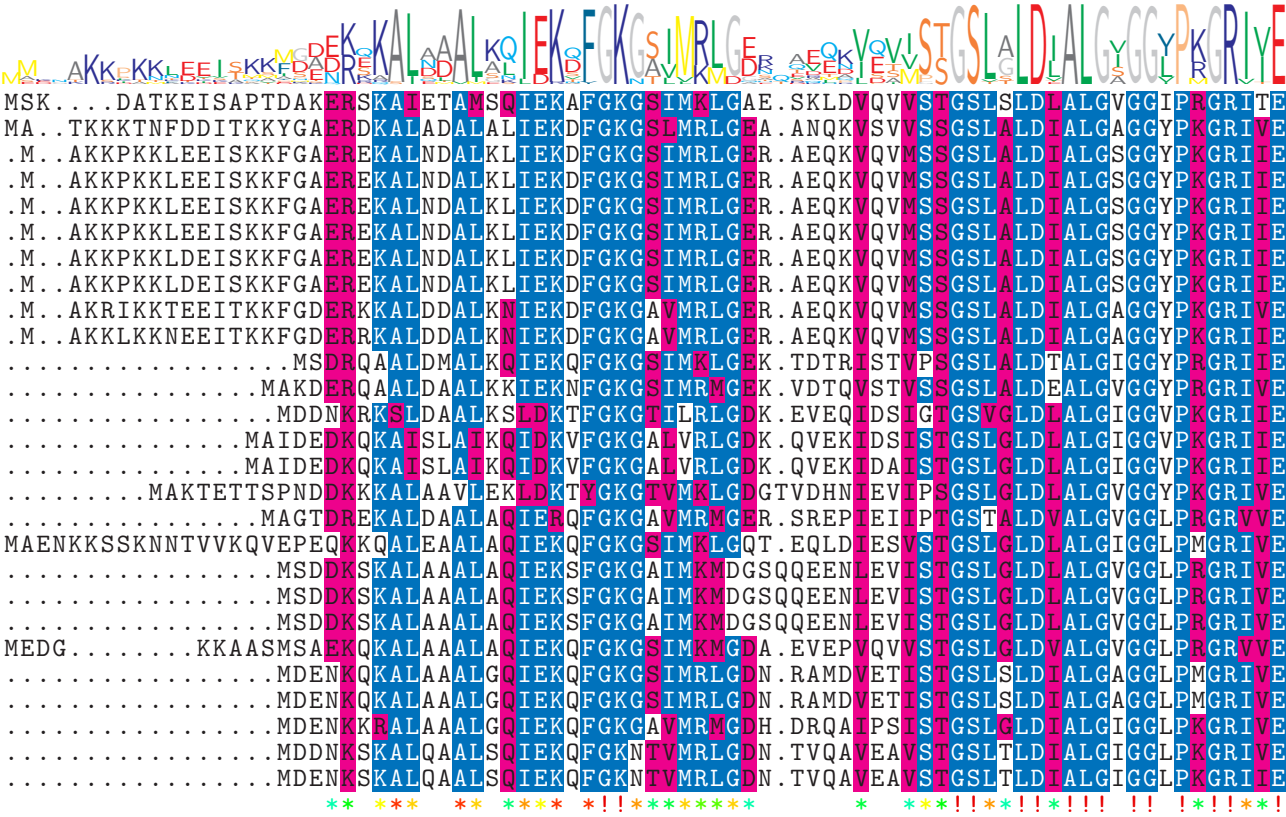


logo

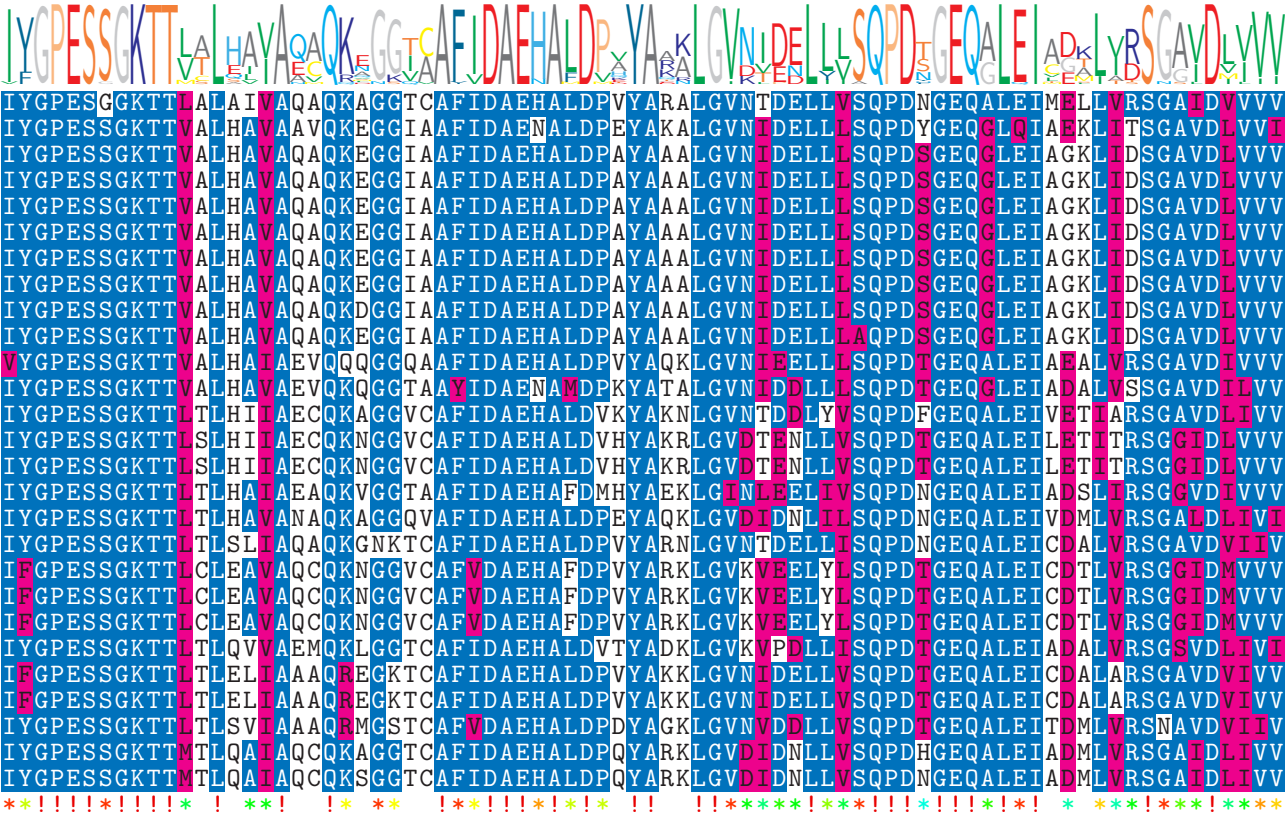
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 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 1211 C694 RS00795 WP 000963128.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 121252 DC74 RS28780 WP 016572779.1
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



75
77
76
76
76
76
76
76
76
76
76
61
63
62
64
64
71
63
63
63
71
62
62
62
62

logo

NTDB id 1313 DR RS12030 WP 010888966.1
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 1211 C694 RS00795 WP 000963128.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 121252 DC74 RS28780 WP 016572779.1
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

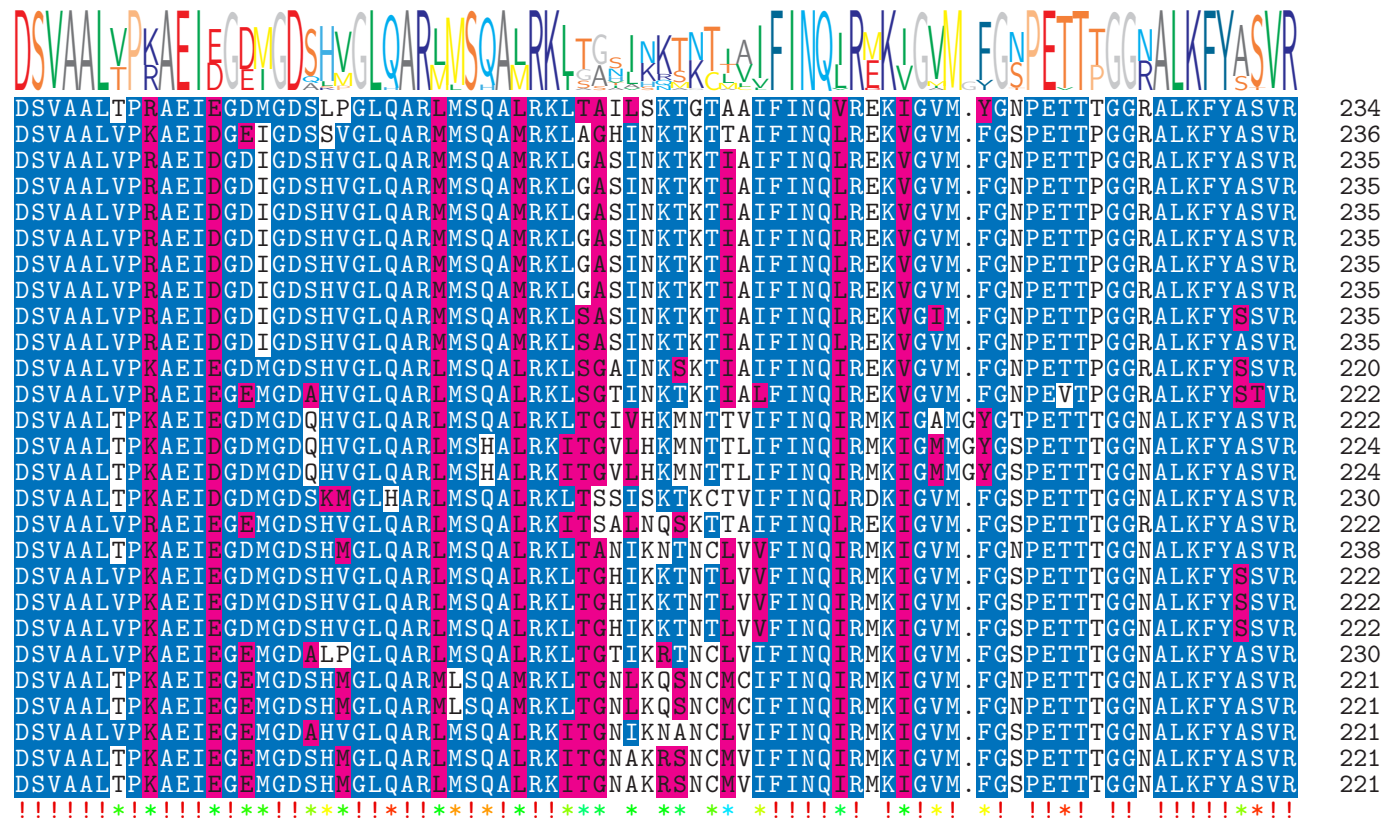


155
157
156
156
156
156
156
156
156
156
141
143
142
144
144
151
143
159
143
143
143
151
142
142
142
142
142

```

NTDB id 1313 DR RS12030 WP 010888966.1
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 1211 C694 RS00795 WP 000963128.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 121252 DC74 RS28780 WP 016572779.1
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 1313 DR RS12030 WP 010888966.1	LDVRRIGQ...PTKVGNDVANTVKTIVKKNKVAAPFKEVELALVYGKGFDQLSDLVGLAADMDIICKKAGSFYSYGDER	310
NTDB id 600 KW2 RS01765 WP 011675413.1	LDVRGSTKIEEGS.GDNKTQIGKITKIKVVKNKVAPPFKVALVDIMFGEGISSTGELLNIAVEEGIIKKSGAWFAYNDEK	315
NTDB id 269 KZH43 RS08665 WP 001085462.1	LDVRGNTQIKGTG.DQKETNVGKETKIKVVKNKVAPPFKEAVVEIMYGEGISKTGELLKIASDLDIKKAGAWYSYKDEK	314
NTDB id 228 SPD RS09265 WP 001085462.1	LDVRGNTQIKGTG.DQKETNVGKETKIKVVKNKVAPPFKEAVVEIMYGEGISKTGELLKIASDLDIKKAGAWYSYKDEK	314
NTDB id 194 SPR RS08825 WP 001085462.1	LDVRGNTQIKGTG.DQKETNVGKETKIKVVKNKVAPPFKEAVVEIMYGEGISKTGELLKIASDLDIKKAGAWYSYKDEK	314
NTDB id 159 SP RS09750 WP 001085462.1	LDVRGNTQIKGTG.DQKETNVGKETKIKVVKNKVAPPFKEAVVEIMYGEGISKTGELLKIASDLDIKKAGAWYSYKDEK	314
NTDB id 499 SM12261 RS08315 WP 078228268.1	LDVRGNTQIKGTG.DQKETNVGKETKIKVVKNKVAPPFKEAVVEIMYGEGISKTGELLKIASDLDIKKAGAWYSYKDEK	314
NTDB id 527 SMSK321 RS11065 WP 001085454.1	LDVRGNTQIKGTG.EQKDSNIGKETKIKVVKNKVAPPFKEAFVEIIMYGEGISRTGELVKIASDLGIIQKAGAWYSYNGEK	314
NTDB id 408 SMU RS09530 WP 002262392.1	LDVRGTTQIKGTG.DQKDSNIGKETKIKVVKNKVAPPFKEAFVEIIMYGEGISRTGELVKIASDLGIIQKAGAWYSYNGEK	314
NTDB id 453 Spy49 1753c ACI62003.1	LEVRRAEQLKQGN.....DVMGNKTKIKVVKNKVAPPFRTAEVDIMYGEGISKEGEIIDLGTELIDVQKSGSWYSYEEER	295
NTDB id 115 BSU 16940 NP 389576.2	LEVRRAETIKNGT.....DMIGNRARIKVVKNKVAPPFKVAEVDIMYGGGISRTGELVDMAVEKDIINKSGSWYSYGSER	297
NTDB id 625 LCA RS02525 WP 011374196.1	LDVRKVAT....L.KQNEEPIGNRVKVVKNKVAPPFRQAEDVDMFGEGLSREGELIDYGVKLDIVDKSGAWFSYKDKK	297
NTDB id 1211 C694 RS00795 WP 000963128.1	IDIRRIAS....L.KQNEQHIGNRAKAKVVKNKVAPPFREAEFDIMFGEGISKEGEIIDYGVKLDIVDKSGAWLSYQDKK	299
NTDB id 1214 NCTC11637 00359 SQJ03206.1	IDIRRIAA....L.KQNEQHIGNRAKAKVVKNKVAPPFREAEFDIMFGEGISKEGEIIDYGVKLDIVDKSGAWLSYQDKK	299
NTDB id 1334 RAOC RS04870 WP 004918236.1	IDIRRLSLSDTGKIKDKSGEVIGNRTKVVKNKVAPPFKSAEFDIMYGEGVSKVGEILDVATDLDIQKSGSWFSYQDTK	310
NTDB id 121252 DC74 RS28780 WP 016572779.1	IDIRRIET....L.KDGTEAVGNRTCKVVKNKVAPPFKQAEDDILYGGGISREGGLIDMGVEHGFIRKSGAWTYEGDQ	297
NTDB id 1389 A4U84 RS07560 WP 021112712.1	LDIRRCGV....V.KDGDEIIGSETKVVKNKVAPPFRREVQFDIMYGEGISRMNELLILAEANGFIKKSGAWFSYDGTG	313
NTDB id 1130 NGFG RS03960 WP 003688695.1	LDIRRTGS....I.KKGEVVLGNETRKKVKNKVAPPFRQAEDDILYGEGISWEGELIDIGVKNDIINKSGAWYSYNGAK	297
NTDB id 1124 NGFG RS03960 WP 003688695.1	LDIRRTGS....I.KKGEVVLGNETRKKVKNKVAPPFRQAEDDILYGEGISWEGELIDIGVKNDIINKSGAWYSYNGAK	297
NTDB id 1123 OK783 RS03845 WP 003688695.1	LDIRRTGS....I.KKGEVVLGNETRKKVKNKVAPPFRQAEDDILYGEGISWEGELIDIGVKNDIINKSGAWYSYNGAK	297
NTDB id 1427 RS RS02760 WP 011000510.1	LDIRRIGS....I.KKGEDEVGNETKVVKNKVAPPFREAIIFDILYGAGVSRGEIIDLGVEAKVVEKSGAWYSYNGER	305
NTDB id 1165 A1552VC RS01565 WP 000344154.1	LDIRRTGA....I.KEGEEVVGNETRIKVVKNKIAAPFKEANTQIMYGGGFNREGELIDLGVKHKMVEKSGAWYSYNGDK	296
NTDB id 1142 GTF74 RS11550 WP 000344154.1	LDIRRTGA....I.KEGEEVVGNETRIKVVKNKIAAPFKEANTQIMYGGGFNREGELIDLGVKHKMVEKSGAWYSYNGDK	296
NTDB id 1205 PSJM300 05545 AFN77183.1	LDIRRTGA....V.KEGDEVVGSSETRKVVKNKVAPPFRQAEDQILYGKGIYRNGEIIDLGVQQGLVEKSGAWYAYKGSK	296
NTDB id 1022 ACIAD RS06390 WP 004925639.1	LDIRRIIGQ....V.KEGDEIIGSETKVVKNKMAPPFREAIIFQILYGKGVNQLGELVDLAVQQNIVQKAGAWYSYQGNK	296
NTDB id 1074 ABD1 RS10195 WP 000344167.1	LDIRRIIGQ....V.KEGDEIIGSETKVVKNKMAPPFKEAIFQILYGKGTNQLGELVDLAVQQDIVQKAGAWYSYQGNK	296
consensus	***!* * ** *****!!!!!!*! * * ****!*!**** ***** ** *** ! !*****! *	

logo

NTDB id 1313 DR RS12030 WP 010888966.1	IGQGKEKTIAYIAERPEMEQEIRDRVMAAIRAGNAGEAPALAPAPA.....APEAAEA.....	363
NTDB id 600 KW2 RS01765 WP 011675413.1	IGQGAEKAKNYLKEHQDVFEIDHKVRAAHGLDDSEVAETEEETTASKTAKAKKKEEKAVETEEIELELED.....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	IGQGSENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE.....PKKEEA..VNEEVPLDLGDELEIEIE	387
NTDB id 228 SPD RS09265 WP 001085462.1	IGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE.....PKKEEA..VNEEVPLDLGDELEIEIE	387
NTDB id 194 SPR RS08825 WP 001085462.1	IGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE.....PKKEEA..VNEEVPLDLGDELEIEIE	387
NTDB id 159 SP RS09750 WP 001085462.1	IGQGSSENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE.....PKKEEA..VNEEVPLDLGDELEIEIE	387
NTDB id 499 SM12261 RS08315 WP 078228268.1	IGQGSSENAKKYLAENPEIFDEIDHQVRVQFGLIDGEEIAES....KKDE.....AAQVDS..VNEEVTLDLGDELEIEIE	383
NTDB id 527 SMSK321 RS11065 WP 001085454.1	IGQGSSENAKKYLAENPEVFAEIDHQVRVQFGLIDGEEAAES....KKDE.....VAQVDS..VNEEVTLDLGDELEIEIE	383
NTDB id 408 SMU RS09530 WP 002262392.1	IGQGSSENAKKFLADNPEIFDDIDHKVVRVQYGLIEEDNTEEEKQSSKEK.....ETDEK..ADKNLVLELDDTIELED.	383
NTDB id 453 Spy49 1753c ACI62003.1	IGQGSSENAKRYLADHPQLFDEIDRKVRVKFGLLEEESEESAMAVASE.....E.....TDDLALDLNGIEIED.	378
NTDB id 115 BSU 16940 NP 389576.2	LGQGGRENAKQFLKENKDIMLMIQEQIREHYGLDNNGVVQQQAETQEEL.EF.E.E.....	348
NTDB id 625 LCA RS02525 WP 011374196.1	IGQGGRENAKNYLADHEDVEDEVRLKVRAAYGISDVPEEDLPTTEDE.QI.NI.LPDDST.....EE.....	355
NTDB id 1245 Cj1673c YP 002345041.1	LGQGGRENSKAFLEKENPEIADEITKAIQNSMGIEGMISGSSEDDEGEE.....	343
NTDB id 1211 C694 RS00795 WP 000963128.1	LGQGGRENAKALLKEDKALADEITLKIKESIGSNEEIIMPLPDEPLEEME.....	347
NTDB id 1214 NCTC11637 00359 SQJ03206.1	LGQGGRENAKALLKEDKALADEITLKIKESIGSNEEIIMPLPDEPLEEME.....	347
NTDB id 1334 RAOC RS04870 WP 004918236.1	LGQGRDITVKELIKDNPELAEELEAKIREKLQAK.....	343
NTDB id 121252 DC74 RS28780 WP 016572779.1	LGQGGKENARNFLKDNPDLANEVEKKIKEKLGVGVPEDVAAEPG.TDAAGPAEAPAKAAAPVAAAKSA....KGVKAAAA	372
NTDB id 1389 A4U84 RS07560 WP 021112712.1	IGQGGKNNAVKWLKENPEIADKLEQEIRNTLASNPNSVLKATASDSNDES DVEEFSEEL.....	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	IGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHITEGT.....QDET DGERPEE.....	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	IGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHITEGT.....QDET DGERPEE.....	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	IGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHITEGT.....QDET DGERPEE.....	348
NTDB id 1427 RS RS02760 WP 011000510.1	IGQGRDNCREFLRENAELAREIENKVRHLGVTPMGAV.TLAEEVEED.....	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	IGQGGKANACKYLLKENPEIAKTLDKKLREMLLNPNENMQLIAETSSAADDVEFGAVPEEF.....	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	IGQGGKANACKYLLKENPEIAKTLDKKLREMLLNPNENMQLIAETSSAADDVEFGAVPEEF.....	354
NTDB id 1205 PSJM300 05545 AFN77183.1	IGQGGKANAAKYLEENPEIGQEIEQQIRAKLLVTSANTKATPVAEDLADADI.....	347
NTDB id 1022 ACIAD RS06390 WP 004925639.1	IGQGGKNNVIRYLEENPQISTEIEAVIREQLLTKASDQTAA.HDETEEEPDLL..ES.....	349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	IGQGGKNNVIRYFEENNQIAEEIERNIREQLLTTGTNGAVQ.I.EDEEEPDLL..LES.....	349
consensus	*!!!!***** * * ***** ***** * * * *	

logo

NTDB id 1313 DR RS12030 WP 010888966.1	E	..	363
NTDB id 600 KW2 RS01765 WP 011675413.1		..	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	E	..	388
NTDB id 228 SPD RS09265 WP 001085462.1	E	..	388
NTDB id 194 SPR RS08825 WP 001085462.1	E	..	388
NTDB id 159 SP RS09750 WP 001085462.1	E	..	388
NTDB id 499 SM12261 RS08315 WP 078228268.1	E	..	384
NTDB id 527 SMSK321 RS11065 WP 001085454.1	E	..	384
NTDB id 408 SMU RS09530 WP 002262392.1		..	383
NTDB id 453 Spy49 1753c ACI62003.1		..	378
NTDB id 115 BSU 16940 NP 389576.2		..	348
NTDB id 625 LCA RS02525 WP 011374196.1		..	355
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 121252 DC74 RS28780 WP 016572779.1	KS	..	374
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