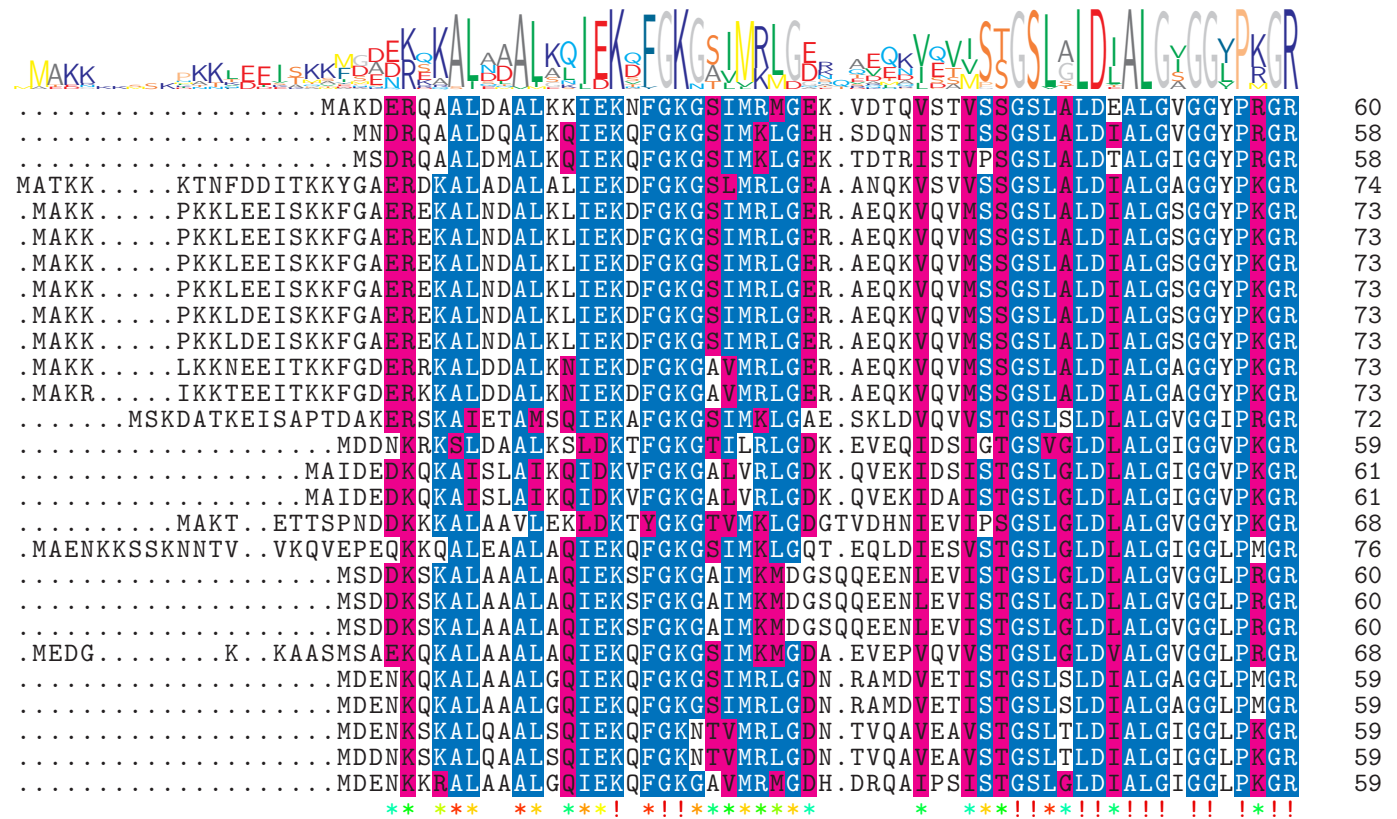


```

NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1047044 AB2Q14 RS07195 WP 003732286.1
NTDB id 115 BSU 16940 NP 389576.2
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 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 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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

```



```

NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1047044 AB2Q14 RS07195 WP 003732286.1
NTDB id 115 BSU 16940 NP 389576.2
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 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 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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1205 PSJM300 05545 AEN77183.1

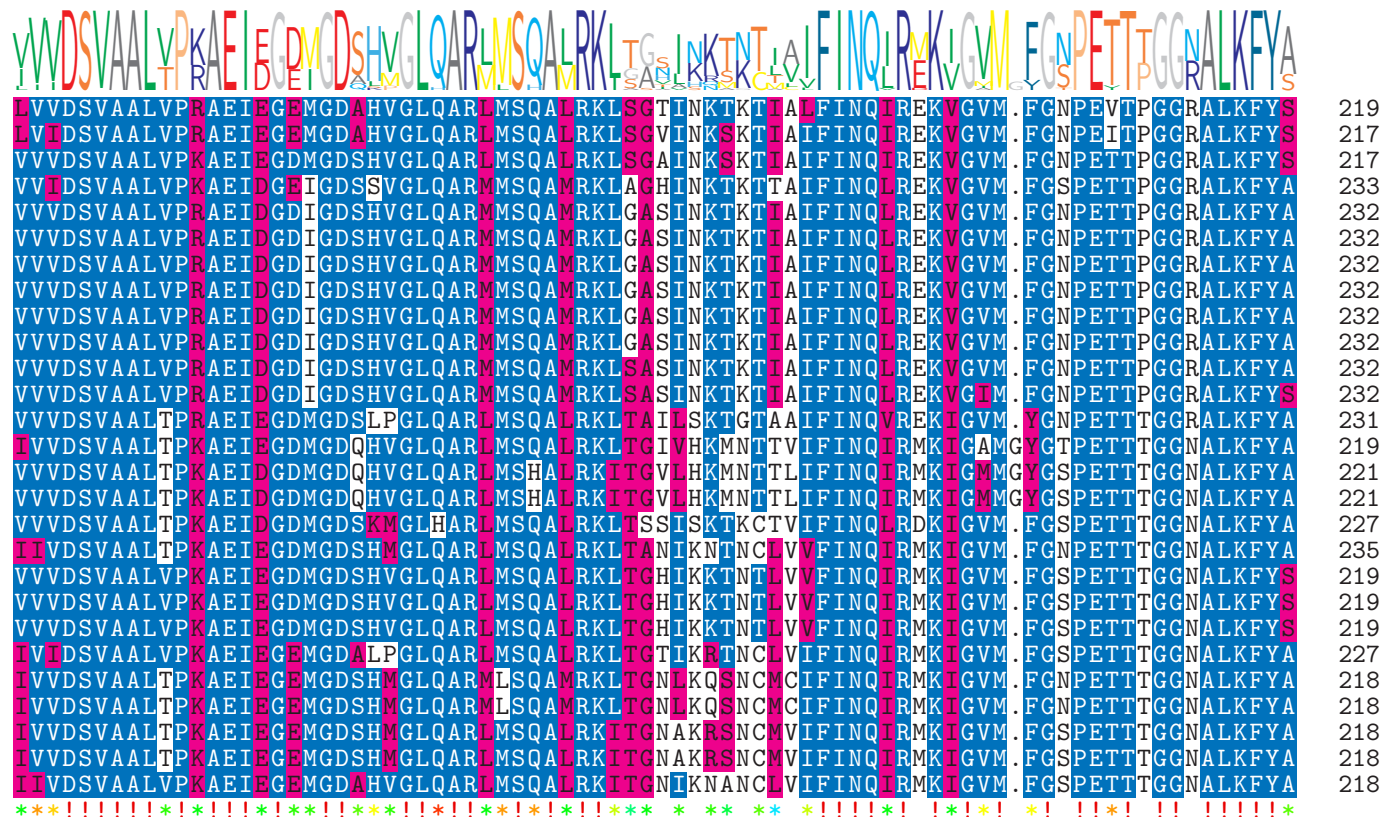
```

[illegible]

```

NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1047044 AB2Q14 RS07195 WP 003732286.1
NTDB id 115 BSU 16940 NP 389576.2
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 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 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 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1205 PSJM300 05545 AFN77183.1

```



logo

NTDB id 625 LCA RS02525 WP 011374196.1	TVRLDVRRAETIKNGT....DMIGNRARIKVVKNKVAPPFKVAEVDIMYGGGISRTGELVDMAVEKDIINKSGSWYSYG	294
NTDB id 1047044 AB2Q14 RS07195 WP 003732286.1	TVRLDVRRAEQLKQGT....DVMGNKTKIKVVKNKVAPPFRIAEVDIMYGGGISREGELVDMAAEVDVINKSGSWYSYK	292
NTDB id 115 BSU 16940 NP 389576.2	TVRLDVRRAEQLKQGN....DVMGNKTKIKVVKNKVAPPFRTAEVDIMYGGGISKEGEIIDLGTELDIVQKSGSWYSYE	292
NTDB id 600 KW2 RS01765 WP 011675413.1	SVRLDVRGSTKIEEGS.GDNKTQIGKIITKIKVVKNKVAPPFKVALVDIMFGEGISSTGELLNIAVEEGTIKKSGAWFAYN	312
NTDB id 269 KZH43 RS08665 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETNVGKETKIKVVKNKVAPPFKAEVVEIMYGGGISKTGELLKIASDLDIKKKAGAWYSYK	311
NTDB id 228 SPD RS09265 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETNVGKETKIKVVKNKVAPPFKAEVVEIMYGGGISKTGELLKIASDLDIKKKAGAWYSYK	311
NTDB id 194 SPR RS08825 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETNVGKETKIKVVKNKVAPPFKAEVVEIMYGGGISKTGELLKIASDLDIKKKAGAWYSYK	311
NTDB id 159 SP RS09750 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETNVGKETKIKVVKNKVAPPFKAEVVEIMYGGGISKTGELLKIASDLDIKKKAGAWYSYK	311
NTDB id 499 SM12261 RS08315 WP 078228268.1	SVRLDVRGSTQIKGTG.DQKDTNVGKETKIKVVKNKVAPPFKAEFVEIMYGGGISKTGELLKIASDLDIKKKAGAWYSYK	311
NTDB id 527 SMSK321 RS11065 WP 001085454.1	SVRLDVRGSTQIKGTG.DQKDTNVGKETKIKVVKNKVAPPFKAEFVEIMYGGGISKTGELLKIASDLDIKKKAGAWYSYK	311
NTDB id 453 Spy49 1753c ACI62003.1	SVRLDVRGTTQIKGTG.DQKDSNIGKETKIKVVKNKVAPPFKVAEVEIMYGGGISRTGELVKIASDLDIQKAGAWFSYN	311
NTDB id 408 SMU RS09530 WP 002262392.1	SVRLDVRGNTQIKGTG.EQKDSNIGKETKIKVVKNKVAPPFKAEFVEIITYGGISRTGELVKIASDLGIIQKAGAWYSYN	311
NTDB id 1313 DR RS12030 WP 010888966.1	SVRLDVRKIGQ....PTKVGNDAAVANTVKIKTVKNKVAAPFKEVELALVYGKGFDQLSDLVGLAADM DIKKKAGSFYSYG	307
NTDB id 1245 Cj1673c YP 002345041.1	SVRLDVRKVAT....L.KQNEEPIGNRVKVVKNKVAPPFRQAEFDVMFGEGLSREGELIDYGVKLDIVDKSGAWFSYK	294
NTDB id 1211 C694 RS00795 WP 000963128.1	SVRIDIRRIAS....L.KQNEQHIGNRAKAKVVKNKVAPPFRFAEFDIMFGEGISKEGEIIDYGVKLDIVDKSGAWLSYQ	296
NTDB id 1214 NCTC11637 00359 SQJ03206.1	SVRIDIRRIAA....L.KQNEQHIGNRAKAKVVKNKVAPPFRFAEFDIMFGEGISKEGEIIDYGVKLDIVDKSGAWLSYQ	296
NTDB id 1334 RAOC RS04870 WP 004918236.1	SVRIDIRRLSDDTGKIKDKSGEVIGNRTKVVKNKVAPPFKSAEFDIMYGGVSKVGEILDVATDLDIQKSGSWFSYQ	307
NTDB id 1389 A4U84 RS07560 WP 021112712.1	SVRLDIRRCGV....V.KDGDEIIGSETKVVKNKVAPPFRREVQFDIMYGGISRMNELLILAEANGFIKKSGAWFSYD	310
NTDB id 1130 NGFG RS03960 WP 003688695.1	SVRLDIRRTGS....I.KKGEEVLGNETRVKVIKNKVAPPFRQAEFDILYGGISWEGELIDIGVKNDIINKSGAWYSYN	294
NTDB id 1124 NGFG RS03960 WP 003688695.1	SVRLDIRRTGS....I.KKGEEVLGNETRVKVIKNKVAPPFRQAEFDILYGGISWEGELIDIGVKNDIINKSGAWYSYN	294
NTDB id 1123 OK783 RS03845 WP 003688695.1	SVRLDIRRTGS....I.KKGEEVLGNETRVKVIKNKVAPPFRQAEFDILYGGISWEGELIDIGVKNDIINKSGAWYSYN	294
NTDB id 1427 RS RS02760 WP 011000510.1	SVRLDIRRIGS....I.KKGDEVVGNETKVVKNKVAPPFRFAEFDILYGAGVSRGEIIDLGVEAKVVEKSGAWYSYN	302
NTDB id 1165 A1552VC RS01565 WP 000344154.1	SVRLDIRRTGA....I.KEGEEVLGNETRIKVVKNKIAAPFKEANTQIMYGGGFNREGELIDLGVKHKMVEKSGAWYSYN	293
NTDB id 1142 GTF74 RS11550 WP 000344154.1	SVRLDIRRTGA....I.KEGEEVLGNETRIKVVKNKIAAPFKEANTQIMYGGGFNREGELIDLGVKHKMVEKSGAWYSYN	293
NTDB id 1074 ABD1 RS10195 WP 000344167.1	SVRLDIRRIGQ....V.KEGDEIVGSETKVVKNKMAPPFKEAIFQILYKGKTNQLGELVDLAVQQDIVQKAGAWYSYQ	293
NTDB id 1022 ACIAD RS06390 WP 004925639.1	SVRLDIRRIGQ....V.KEGDEIIGSETKVVKNKMAPPFKEAIFQILYKGKVNQLGELVDLAVQQNIVQKAGAWYSYQ	293
NTDB id 1205 PSJM300 05545 AFN77183.1	SVRLDIRRTGA....V.KEGDEVVGSSETRVKVVKNKVAPPFRQAEFQILYKGKIYENGEIIDLGVQQGLVEKSGAWYAYK	293
consensus	*!!**!* * ** *****!!!!!!*! * * *****!*!*** ***** ** *** ! !*****!	

logo

NTDB id 625 LCA RS02525 WP 011374196.1	SERIGQGRENAKNYLADHEDVEDEVRLKVRRAAYGISDVPEEDLPTTEDEQINILPDDSTEE.....	355
NTDB id 1047044 AB2Q14 RS07195 WP 003732286.1	EERIGQGRENAKQYLKEHTDIRDEISKRVREEYEDIGSSKEPLD..EKEETLSLLDDE.....	348
NTDB id 115 BSU 16940 NP 389576.2	EERLGQGRENAKQFLKENKDIMLMIQEQUIREHYGLDNNGVVQQAEETQEELEFEE.....	348
NTDB id 600 KW2 RS01765 WP 011675413.1	DEKIGQGAEKAKNYLKEHQDVFDEIDHKVRAAHGLDDSEVAETEEETTASKTAKAKAKKEEKAVETEEIELELED.....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	DEKIGQGSENAKKYLAHPFIFDEIDKQVRSKFGGLIDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIE	385
NTDB id 228 SPD RS09265 WP 001085462.1	DEKIGQGSENAKKYLAHPFIFDEIDKQVRSKFGGLIDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIE	385
NTDB id 194 SPR RS08825 WP 001085462.1	DEKIGQGSENAKKYLAHPFIFDEIDKQVRSKFGGLIDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIE	385
NTDB id 159 SP RS09750 WP 001085462.1	DEKIGQGSENAKKYLAHPFIFDEIDKQVRSKFGGLIDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIE	385
NTDB id 499 SM12261 RS08315 WP 078228268.1	DEKIGQGSENAKKYLADNPEIFDEIDHQVVRVQFGLIDGEEIAES....KKDE....AAQVDS..VNEEVTLDLGDELEIE	381
NTDB id 527 SMSK321 RS11065 WP 001085454.1	DEKIGQGSENAKKYLADNPEVFAEIDHQVVRVQFGLIDGEEAAES....KKDE....VAQVDS..VNEEVTLDLGDELEIE	381
NTDB id 453 Spy49 1753c ACI62003.1	GEKIGQGSENAKRYLADHPQLFDEIDRKVRVKFGLLEESEESAMAVASE.....E.....TDDLALDLNNGIEIE	377
NTDB id 408 SMU RS09530 WP 002262392.1	GEKIGQGSENAKKFLADNPEIFDDIDHKVVRVQYGLIEEDNTEEKQSSKEK.....ETDEK..ADKNLVLELDDTIELE	382
NTDB id 1313 DR RS12030 WP 010888966.1	DERIGQGKEKTIAYIAERPEMEQEIRDRVMAAIRAGNAGEAPALAPAPAAPEAAEA.....	363
NTDB id 1245 Cj1673c YP 002345041.1	DKKLGGGRENASKAFLKENPEIADEITKAIQNSMGIEGMI....SGSEDDE..GEE.....	343
NTDB id 1211 C694 RS00795 WP 000963128.1	DKKLGGGRENAKALLKEDKALADEITLKIKESIGSNEEI....MPLPDEP..LEEME.....	347
NTDB id 1214 NCTC11637 00359 SQJ03206.1	DKKLGGGRENAKALLKEDKALADEITLKIKESIGSNEEI....MPLPDEP..LEEME.....	347
NTDB id 1334 RAOC RS04870 WP 004918236.1	DTKLGGGRDTPVKELTKDNPELAEELEAKIREKLQAK.....	343
NTDB id 1389 A4U84 RS07560 WP 021112712.1	GTKIGQGGKNNAVKWLKENPEIADKLEQEIRNTLASNPNS....VLKATASDSNDESVDVEE..FSEEEL.....	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	GAKIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI....TEGTQDET.....GE..RPEE.....	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	GAKIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI....TEGTQDET.....GE..RPEE.....	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	GAKIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI....TEGTQDET.....GE..RPEE.....	348
NTDB id 1427 RS RS02760 WP 011000510.1	GERIGQGRDNCREFLRENAELAREIENKVRHLGVTPMG....AV.TLAEVEED.....	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	GDKIGQGGKANACKYLLKENPEIAKTLDKKLREMLLNPNM....QLIAETSSAADDVEFGA..VPEEF.....	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	GDKIGQGGKANACKYLLKENPEIAKTLDKKLREMLLNPNM....QLIAETSSAADDVEFGA..VPEEF.....	354
NTDB id 1074 ABD1 RS10195 WP 000344167.1	GNKIGQGGKNNVIRYFEENNQIAEEIERNIREQLLTGTN....GAVQ.I.EDEEEDPD..L..LLES.....	349
NTDB id 1022 ACIAD RS06390 WP 004925639.1	GNKIGQGGKNNVIRYLEENPQISTEIEAVIREQLLTKASD....QTAA.HDETEEEDPD..L..LES.....	349
NTDB id 1205 PSJM300 05545 AFN77183.1	GSKIGQGGKANAAKYLEENPEIGQEIEQQIRAKLLVTSAN....TKATPVAEDLADAD..I.....	347
consensus	**!!*!* * * * * * * * * *	

logo

			IEE	
NTDB id	625 LCA RS02525 WP 011374196.1	...	355	
NTDB id	1047044 AB2Q14 RS07195 WP 003732286.1	...	348	
NTDB id	115 BSU 16940 NP 389576.2	...	348	
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	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 RA0C 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	1074 ABD1 RS10195 WP 000344167.1	...	349	
NTDB id	1022 ACIAD RS06390 WP 004925639.1	...	349	
NTDB id	1205 PSJM300 05545 AFN77183.1	...	347	
consensus				

-  non conserved
-  similar
-  ≥ 50% conserved