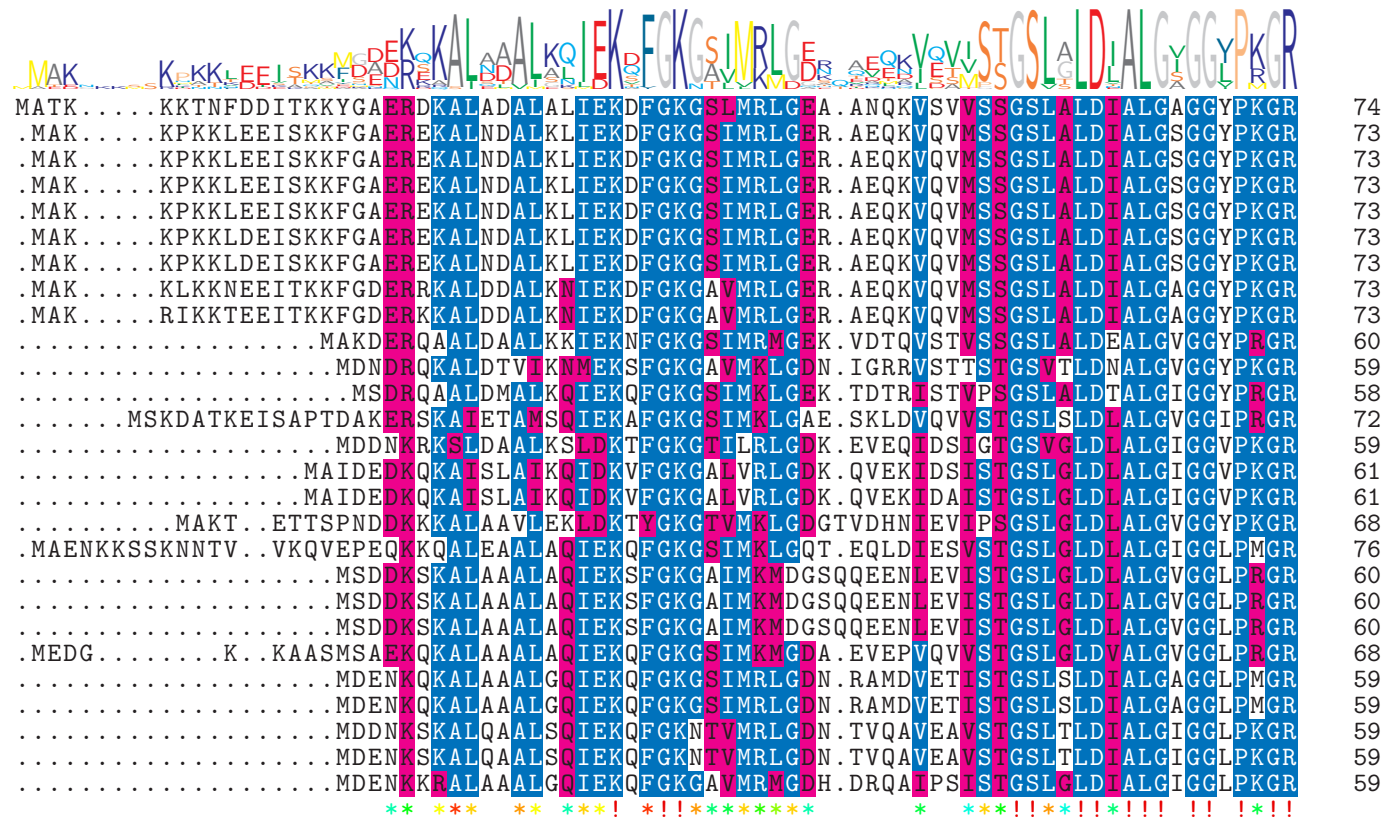


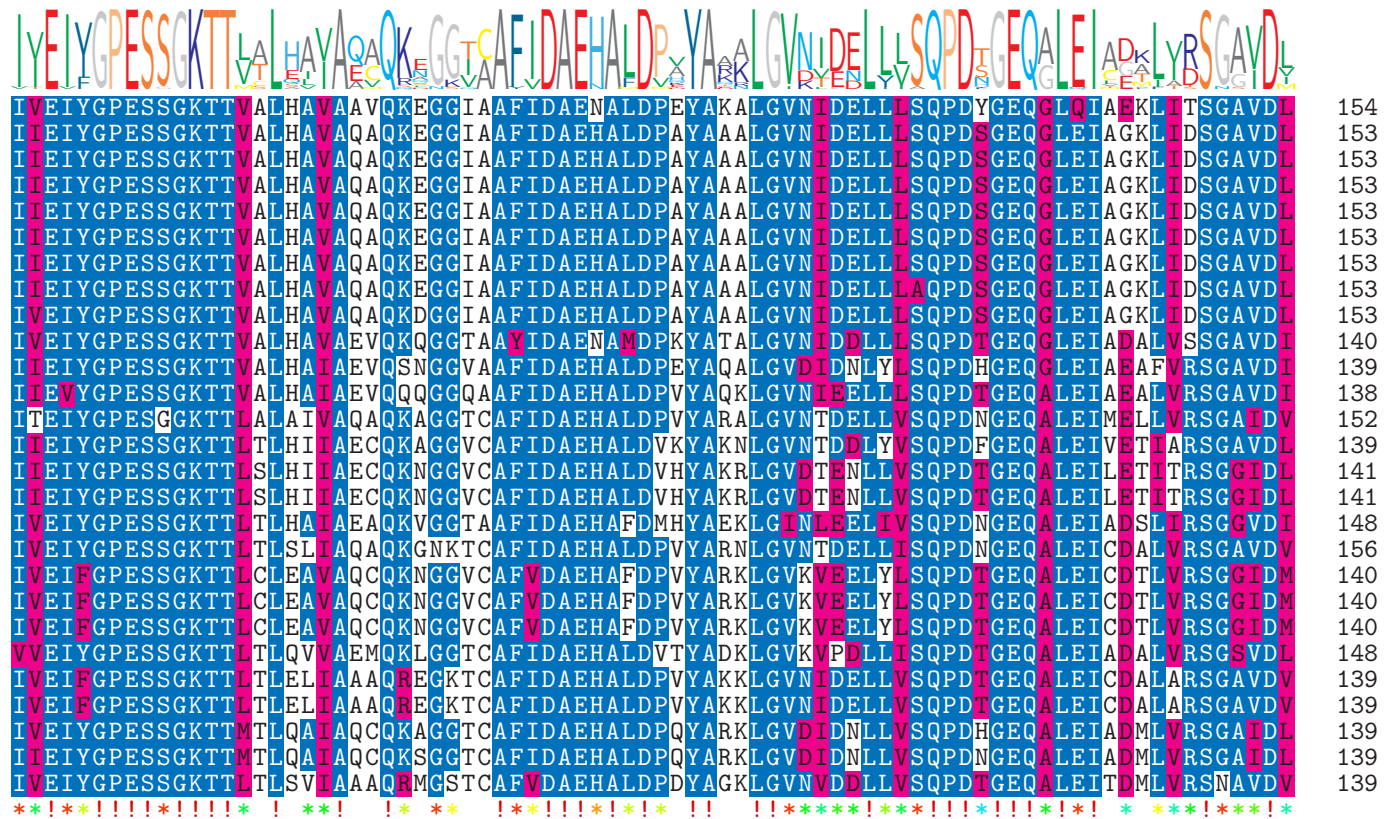
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NTDB id 194 SPR RS08825 WP 001085462.1  
NTDB id 159 SP RS09750 WP 001085462.1  
NTDB id 499 SM12261 RS08315 WP 078228268.1  
NTDB id 527 SMSK321 RS11065 WP 001085454.1  
NTDB id 453 Spy49 1753c ACI62003.1  
NTDB id 408 SMU RS09530 WP 002262392.1  
NTDB id 625 LCA RS02525 WP 011374196.1  
NTDB id 225624 B7437 RS06530 WP 000368166.1  
NTDB id 115 BSU 16940 NP 389576.2  
NTDB id 1313 DR RS12030 WP 010888966.1  
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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 1022 ACIAD RS06390 WP 004925639.1  
NTDB id 1074 ABD1 RS10195 WP 000344167.1  
NTDB id 1205 PSJM300 05545 AFN77183.1  
consensus



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NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
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consensus

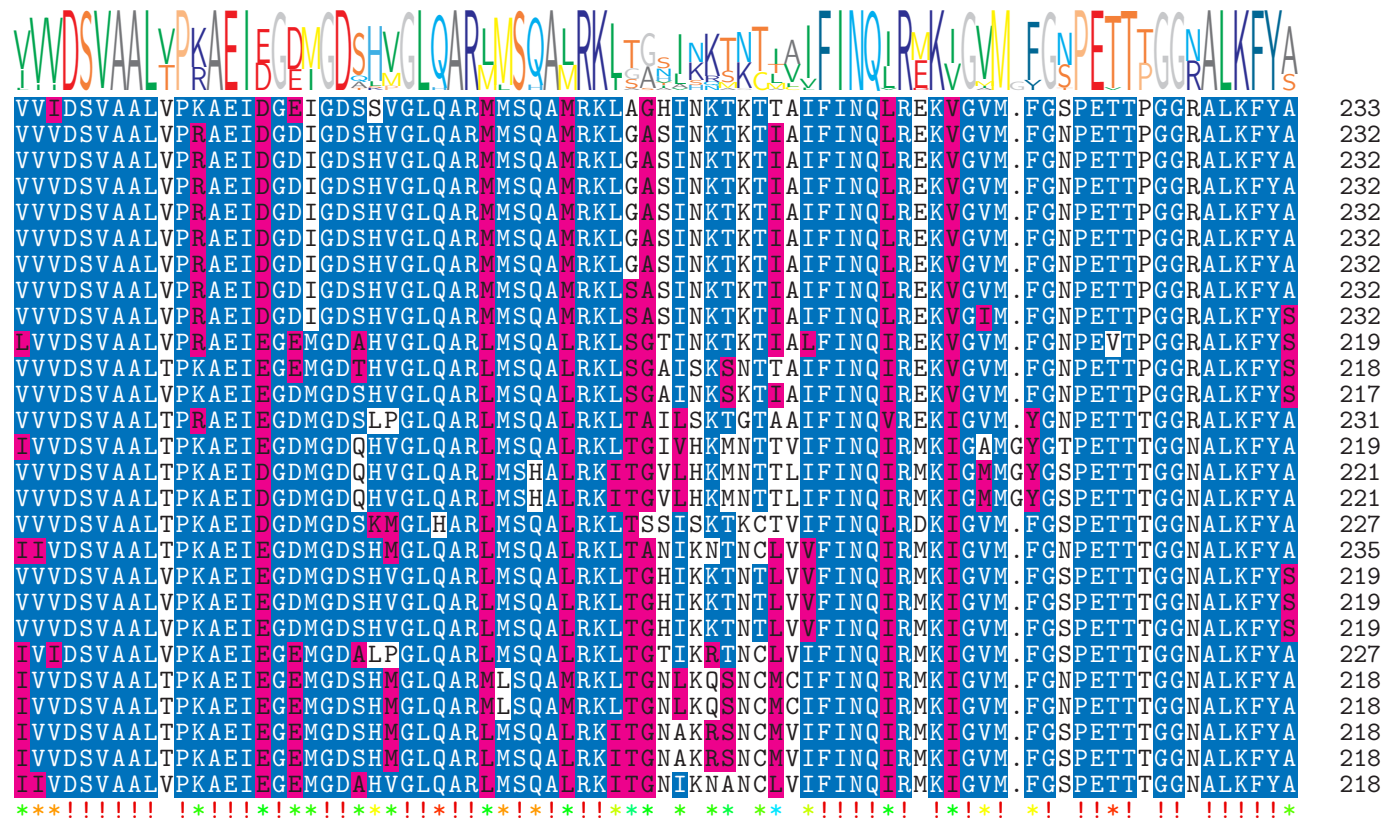
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NTDB id 600 KW2 RS01765 WP 011675413.1
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NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

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|                                             |                                                                                      |     |
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| NTDB id 600 KW2 RS01765 WP 011675413.1      | SVRLDVRGSTKIEEGS.GDNKTQIGKITKIKVVKNKVAPPFKEAVALVDIMFGEGISSTGELINIAVEEGITIKKSGAWFAYN  | 312 |
| NTDB id 269 KZH43 RS08665 WP 001085462.1    | SVRLDVRGNTQIKGTG.DQKETNVGKETKIKVVKNKVAPPFKEAVVEIMY GEGISKTGELLKIASDLDI IKKAGAWYSYK   | 311 |
| NTDB id 228 SPD RS09265 WP 001085462.1      | SVRLDVRGNTQIKGTG.DQKETNVGKETKIKVVKNKVAPPFKEAVVEIMY GEGISKTGELLKIASDLDI IKKAGAWYSYK   | 311 |
| NTDB id 194 SPR RS08825 WP 001085462.1      | SVRLDVRGNTQIKGTG.DQKETNVGKETKIKVVKNKVAPPFKEAVVEIMY GEGISKTGELLKIASDLDI IKKAGAWYSYK   | 311 |
| NTDB id 159 SP RS09750 WP 001085462.1       | SVRLDVRGNTQIKGTG.DQKETNVGKETKIKVVKNKVAPPFKEAVVEIMY GEGISKTGELLKIASDLDI IKKAGAWYSYK   | 311 |
| NTDB id 499 SM12261 RS08315 WP 078228268.1  | SVRLDVRGSTQIKGTG.DQKDTNVGKETKIKVVKNKVAPPFKEAFVEIMY GEGISKTGELLKIASDLDI IKKAGAWYSYK   | 311 |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1  | SVRLDVRGSTQIKGTG.DQKDTNVGKETKIKVVKNKVAPPFKEAFVEIMY GEGISKTGELLKIASDLDI IKKAGAWYSYK   | 311 |
| NTDB id 453 Spy49 1753c ACI62003.1          | SVRLDVRGTTQIKGTG.DQKDSNIGKETKIKVVKNKVAPPFKEAEVEIMY GEGISRTGELVKIASDLDI IQKAGAWFSYN   | 311 |
| NTDB id 408 SMU RS09530 WP 002262392.1      | SVRLDVRGNTQIKGTG.EQKDSNIGKETKIKVVKNKVAPPFKEAFVEI IY GEGISRTGELVKIASDLGI IQKAGAWYSYN  | 311 |
| NTDB id 625 LCA RS02525 WP 011374196.1      | TVRLEVRRRAETIKNGT.....DMIGNRARIKVVKNKVAPPFKEAEVDIMY GQGISRTGELVDMAVEKDI INKSGSWYSYG  | 294 |
| NTDB id 225624 B7437 RS06530 WP 000368166.1 | SVRLEVRRRAEQLKQGQ.....EIVGNRTKIKVVKNKVAPPFRVAEVDIMY GQGISKEGELIDLGVENDIVDKSGAWYSYN   | 293 |
| NTDB id 115 BSU 16940 NP 389576.2           | SVRLEVRRRAEQLKQGN.....DVMGNKTKIKVVKNKVAPPFR TAEVDIMY GEGISKEGETIIDLGTELDIVQKSGSWYSYE | 292 |
| NTDB id 1313 DR RS12030 WP 010888966.1      | SVRLDVRKIGQ....PTKVGNDAAVANTVKIKTVKNKVAAPFKEVELALIVYGKGFQDLSDLVGLAADMDI IKKAGSFYSYG  | 307 |
| NTDB id 1245 Cj1673c YP 002345041.1         | SVRLDVRKVAT....L.KQNEEPIGNRVKVVKNKVAPPFRQAEFDV MFGEGLSREGELIDYGVKLDIVDKSGAWFSYK      | 294 |
| NTDB id 1211 C694 RS00795 WP 000963128.1    | SVRIDIRRIAS....L.KQNEQHIIGNRAKAKVVKNKVAPPFR EAEFDIMFGEGISKEGETIIDYGVKLDIVDKSGAWLSYQ  | 296 |
| NTDB id 1214 NCTC11637 00359 SQJ03206.1     | SVRIDIRRIAA....L.KQNEQHIIGNRAKAKVVKNKVAPPFR EAEFDIMFGEGISKEGETIIDYGVKLDIVDKSGAWLSYQ  | 296 |
| NTDB id 1334 RAOC RS04870 WP 004918236.1    | SVRIDIRRLSDTGKIKDKSGEVIGNRTKVVKNKVAPPFKSAEFDIMY GEGVSKVGEILDVATDLDI IQKSGSWFSYQ      | 307 |
| NTDB id 1389 A4U84 RS07560 WP 021112712.1   | SVRLDIRRCGV....V.KDGDEIIGSETKVVKNKVAPPFR EVQFDIMY GEGISRMNELLILAEANGFIKKSGAWFSYD     | 310 |
| NTDB id 1130 NGFG RS03960 WP 003688695.1    | SVRLDIRRTGS....I.KKGEVVLGNETRVKVIKNKVAPPFRQAEFDILY GEGISWEGELIDIGVKNDI INKSGAWYSYN   | 294 |
| NTDB id 1124 NGFG RS03960 WP 003688695.1    | SVRLDIRRTGS....I.KKGEVVLGNETRVKVIKNKVAPPFRQAEFDILY GEGISWEGELIDIGVKNDI INKSGAWYSYN   | 294 |
| NTDB id 1123 OK783 RS03845 WP 003688695.1   | SVRLDIRRTGS....I.KKGEVVLGNETRVKVIKNKVAPPFRQAEFDILY GEGISWEGELIDIGVKNDI INKSGAWYSYN   | 294 |
| NTDB id 1427 RS RS02760 WP 011000510.1      | SVRLDIRRIGS....I.KKGEDEVGNETKVVKNKVAPPFR EAEIFDILY GAGVSR EGEIIDLGVEAKVVEKSGAWYSYN   | 302 |
| NTDB id 1165 A1552VC RS01565 WP 000344154.1 | SVRLDIRRTGA....I.KEGEEVVGNETRIKVVKNKIAAPFKEANTQIMY GQGFNREGELIDLGVKHKMVEKSGAWYSYN    | 293 |
| NTDB id 1142 GTF74 RS11550 WP 000344154.1   | SVRLDIRRTGA....I.KEGEEVVGNETRIKVVKNKIAAPFKEANTQIMY GQGFNREGELIDLGVKHKMVEKSGAWYSYN    | 293 |
| NTDB id 1022 ACIAD RS06390 WP 004925639.1   | SVRLDIRRIGQ....V.KEGDEIIGSETKVVKNKMAPPFR EAEIFQILY GKGVTNQLGELVDLAVQQNIVQKAGAWYSYQ   | 293 |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1    | SVRLDIRRIGQ....V.KEGDEIIGSETKVVKNKMAPPFKEAIFQILY GKGVTNQLGELVDLAVQQDIVQKAGAWYSYQ     | 293 |
| NTDB id 1205 PSJM300 05545 AFN77183.1       | SVRLDIRRTGA....V.KEGDEVVGS ETRVKNKVAPPFRQAEFQILY GKGVIYRNGEIIDLGVVQQGLVEKSGAWYAYK    | 293 |
| consensus                                   | *!!**!*~*~***!!*!!*!!*!!*~*~***!!*!!***~***~***~!!*!!***!                            |     |



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|                                             |          |                 |                 |                  |                 |               |       |     |
|---------------------------------------------|----------|-----------------|-----------------|------------------|-----------------|---------------|-------|-----|
| NTDB id 600 KW2 RS01765 WP 011675413.1      | DEKIGQGA | EKAKNYLKEHQDV   | DEIDHKVRAAHG    | LDDSEVAETEEETT   | ASKTKAKAKKEEK   | AVETEEIELELED | ....  | 387 |
| NTDB id 269 KZH43 RS08665 WP 001085462.1    | DEKIGQGS | ENAKKYLAEHPEIF  | DEIDKQVRSKFGL   | IDGEEVSEQDTEN    | KKDE....PKKEEA  | .VNEEVPLDLGDE | LEIE  | 385 |
| NTDB id 228 SPD RS09265 WP 001085462.1      | DEKIGQGS | ENAKKYLAEHPEIF  | DEIDKQVRSKFGL   | IDGEEVSEQDTEN    | KKDE....PKKEEA  | .VNEEVPLDLGDE | LEIE  | 385 |
| NTDB id 194 SPR RS08825 WP 001085462.1      | DEKIGQGS | ENAKKYLAEHPEIF  | DEIDKQVRSKFGL   | IDGEEVSEQDTEN    | KKDE....PKKEEA  | .VNEEVPLDLGDE | LEIE  | 385 |
| NTDB id 159 SP RS09750 WP 001085462.1       | DEKIGQGS | ENAKKYLAEHPEIF  | DEIDKQVRSKFGL   | IDGEEVSEQDTEN    | KKDE....PKKEEA  | .VNEEVPLDLGDE | LEIE  | 385 |
| NTDB id 499 SM12261 RS08315 WP 078228268.1  | DEKIGQGS | ENAKKYLAADNPEIF | DEIDHQVRVQFGL   | IDGEEIAES....    | KKDE....AAQVDS  | .VNEEVTLDLGDE | LEIE  | 381 |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1  | DEKIGQGS | ENAKKYLAADNPEV  | FAEIDHQVRVQFGL  | IDGEEAAES....    | KKDE....VAQVDS  | .VNEEVTLDLGDE | LEIE  | 381 |
| NTDB id 453 Spy49 1753c ACI62003.1          | GEKIGQGS | ENAKRYLADHPQLF  | DEIDRKVRVKFGL   | LEESEEEESAMAV    | ASE.....E.....  | TDDLALDLN     | GIEIE | 377 |
| NTDB id 408 SMU RS09530 WP 002262392.1      | GEKIGQGS | ENAKKFLADNPEIF  | DDIDHKVRVQYGL   | IEEDNTEEEKQSS    | KEK.....ETDEK   | .ADKNLVLELDD  | TIELE | 382 |
| NTDB id 625 LCA RS02525 WP 011374196.1      | SERIGQG  | RENAKNYLADHED   | VEDEVRLKVRAAY   | GISDVPEEDLPTTE   | DEQINILPDDSTEE  | .....         |       | 355 |
| NTDB id 225624 B7437 RS06530 WP 000368166.1 | GERMGQG  | KENVKMYLKENPQ   | IKKEIDRKLREKL   | GISDGDVEETEDA    | ...PKSLFDEE     | .....         |       | 347 |
| NTDB id 115 BSU 16940 NP 389576.2           | EERLGQG  | RENAKQFLKENKD   | IMLMIQEQIREHY   | GLDNNGVVQQAEET   | QEELEFEE        | .....         |       | 348 |
| NTDB id 1313 DR RS12030 WP 010888966.1      | DERIGQG  | KEKTIAYIAERP    | EMEQUEIRDRVMAA  | IRAGNAGEAPALAP   | APAAPEAAEA      | .....         |       | 363 |
| NTDB id 1245 Cj1673c YP 002345041.1         | DKKLGQG  | RENSKAFLENPEI   | ADEITKAIQNSMG   | IEGMI....SGSEDD  | .EGEE.....      |               |       | 343 |
| NTDB id 1211 C694 RS00795 WP 000963128.1    | DKKLGQG  | RENAKALLKEDKA   | LADAITLKIKESIG  | SNEEI....MPLPDE  | .PLEEME.....    |               |       | 347 |
| NTDB id 1214 NCTC11637 00359 SQJ03206.1     | DKKLGQG  | RENAKALLKEDKA   | LADAITLKIKESIG  | SNEEI....MPLPDE  | .PLEEME.....    |               |       | 347 |
| NTDB id 1334 RAOC RS04870 WP 004918236.1    | DTKLGQGR | DTVKELIKDNPELA  | EELEAKIREKLQAK  | .....            |                 |               |       | 343 |
| NTDB id 1389 A4U84 RS07560 WP 021112712.1   | GTKIGQG  | KNNAVKWLKENPEI  | ADKLEQEIRNTLAS  | NPNS....VLKATAS  | DSNDESD..VEEFSE | EEEL.....     |       | 372 |
| NTDB id 1130 NGFG RS03960 WP 003688695.1    | GAKIGQG  | KDNVRVWLKENPEI  | SDAIDAKIRALNG   | VEMHI....TEGTQDE | TDGER.....PEE   | .....         |       | 348 |
| NTDB id 1124 NGFG RS03960 WP 003688695.1    | GAKIGQG  | KDNVRVWLKENPEI  | SDAIDAKIRALNG   | VEMHI....TEGTQDE | TDGER.....PEE   | .....         |       | 348 |
| NTDB id 1123 OK783 RS03845 WP 003688695.1   | GAKIGQG  | KDNVRVWLKENPEI  | SDAIDAKIRALNG   | VEMHI....TEGTQDE | TDGER.....PEE   | .....         |       | 348 |
| NTDB id 1427 RS RS02760 WP 011000510.1      | GERIGQGR | DNCREFLRENAEL   | AREIENKVREHLG   | VTPMG....AVTLA   | .EEVEED.....    |               |       | 352 |
| NTDB id 1165 A1552VC RS01565 WP 000344154.1 | GDKIGQG  | KANACKYLLKENPEI | AKTLDKKLREMLLN  | PENM....QLIAETSS | AADDVE..FGAVPEE | F.....        |       | 354 |
| NTDB id 1142 GTF74 RS11550 WP 000344154.1   | GDKIGQG  | KANACKYLLKENPEI | AKTLDKKLREMLLN  | PENM....QLIAETSS | AADDVE..FGAVPEE | F.....        |       | 354 |
| NTDB id 1022 ACIAD RS06390 WP 004925639.1   | GNKIGQG  | KNNVIRYFEENPQ   | ISTEIEAVIREQLLT | KASD....QTAA.HDE | TEEEPD..LL..ES  | .....         |       | 349 |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1    | GNKIGQG  | KNNVIRYFEENPQ   | IAEEIERNIREQLLT | TGTN....GAVQ.I   | .EDEEEPD..LL..  | LES.....      |       | 349 |
| NTDB id 1205 PSJM300 05545 AFN77183.1       | GSKIGQG  | KANAACKYLEENPEI | IGQIEEQIRAKLL   | VTSAN....TKATPVA | EADLADAD..I     | .....         |       | 347 |
| consensus                                   | ***!!!   | *****           | **              | *****            | *****           | **            | **    |     |

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|---------------------------------------------|-----|-----|--|
|                                             |     | 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 625 LCA RS02525 WP 011374196.1      | ... | 355 |  |
| NTDB id 225624 B7437 RS06530 WP 000368166.1 | ... | 347 |  |
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| NTDB id 1313 DR RS12030 WP 010888966.1      | ... | 363 |  |
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| 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 |  |
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| NTDB id 1130 NGFG RS03960 WP 003688695.1    | ... | 348 |  |
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| NTDB id 1074 ABD1 RS10195 WP 000344167.1    | ... | 349 |  |
| NTDB id 1205 PSJM300 05545 AFN77183.1       | ... | 347 |  |
| consensus                                   |     |     |  |

- X non conserved
- X similar
- X ≥ 50% conserved