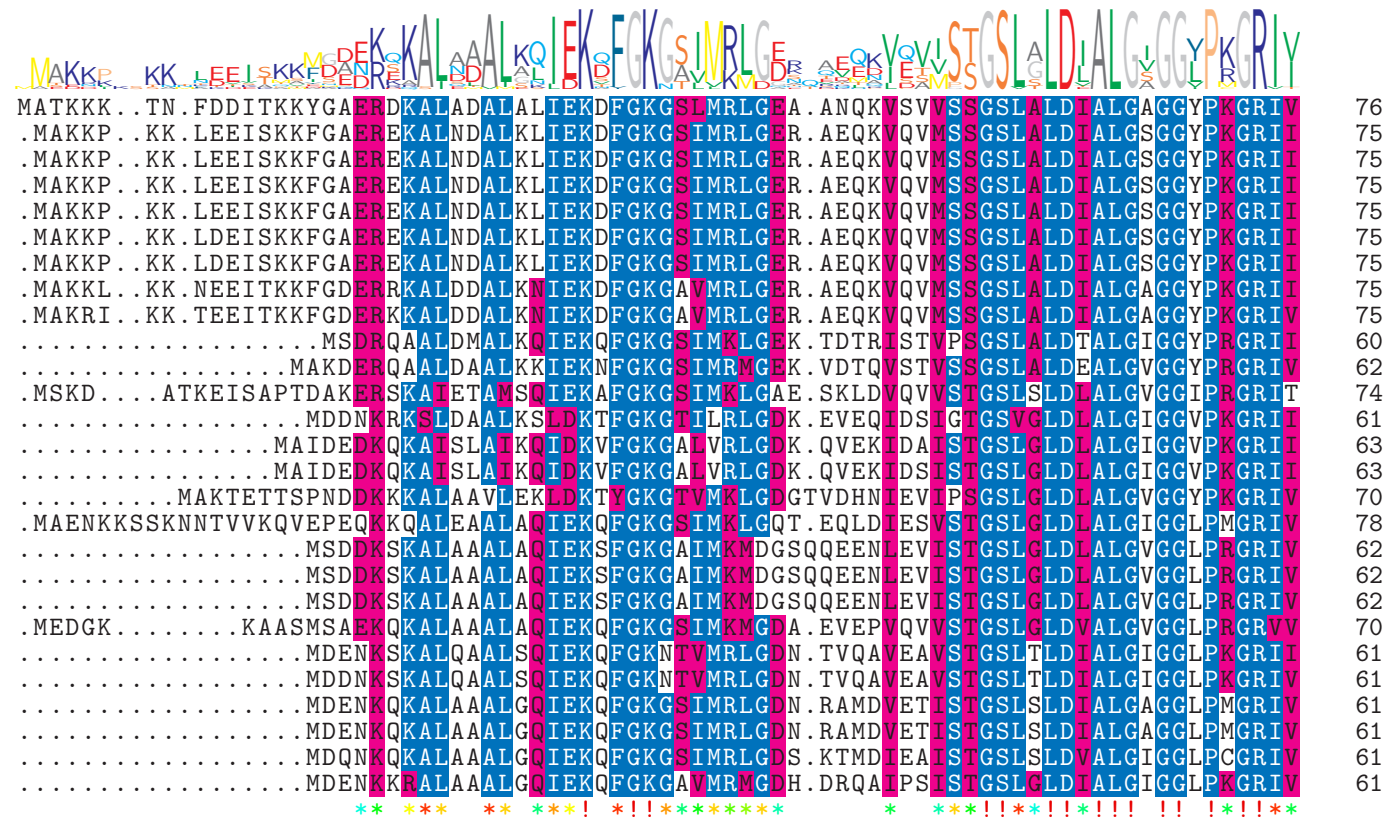


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consensus

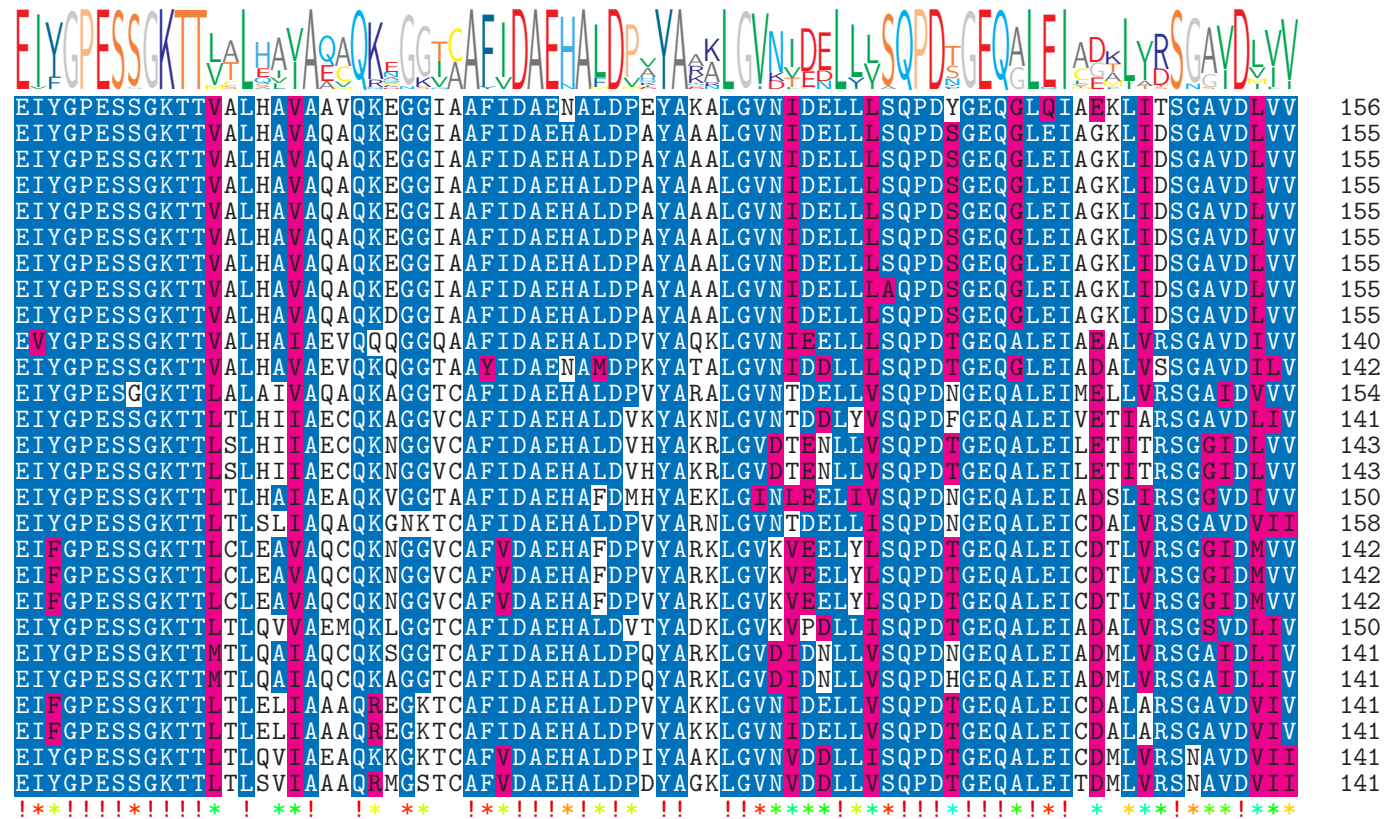
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consensus

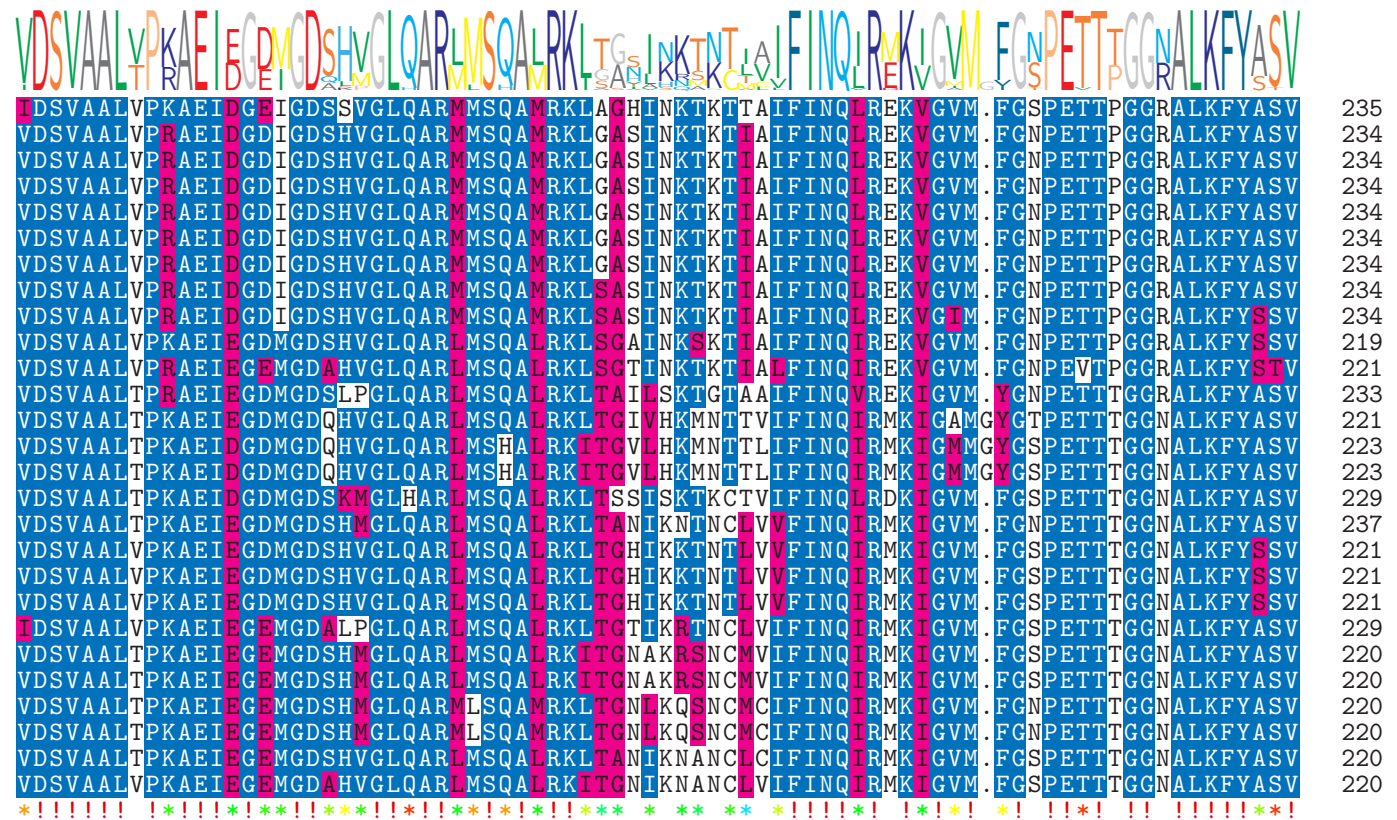
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NTDB id 385289 FOQ17 RS02475 WP 005324574.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

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|                                             |          |          |         |         |         |          |                  |        |        |        |        |       |       |        |         |         |     |     |
|---------------------------------------------|----------|----------|---------|---------|---------|----------|------------------|--------|--------|--------|--------|-------|-------|--------|---------|---------|-----|-----|
| NTDB id 600 KW2 RS01765 WP 011675413.1      | RLDVRG   | STKIEEGS | .GDNKTQ | IGKITK  | IKVVKN  | KVAPPF   | KVALV            | DIMF   | GEGIS  | STGEL  | INTAVE | EETII | IKKSG | AWFAY  | NDE     | 314     |     |     |
| NTDB id 269 KZH43 RS08665 WP 001085462.1    | RLDVRG   | NTQIKGTG | .DQKETN | VGKETK  | IKVVKN  | KVAPPF   | KEAVV            | EIMY   | GEGIS  | KTGEL  | LKIAS  | DLDI  | IKKAG | AWYSY  | KDE     | 313     |     |     |
| NTDB id 228 SPD RS09265 WP 001085462.1      | RLDVRG   | NTQIKGTG | .DQKETN | VGKETK  | IKVVKN  | KVAPPF   | KEAVV            | EIMY   | GEGIS  | KTGEL  | LKIAS  | DLDI  | IKKAG | AWYSY  | KDE     | 313     |     |     |
| NTDB id 194 SPR RS08825 WP 001085462.1      | RLDVRG   | NTQIKGTG | .DQKETN | VGKETK  | IKVVKN  | KVAPPF   | KEAVV            | EIMY   | GEGIS  | KTGEL  | LKIAS  | DLDI  | IKKAG | AWYSY  | KDE     | 313     |     |     |
| NTDB id 159 SP RS09750 WP 001085462.1       | RLDVRG   | NTQIKGTG | .DQKETN | VGKETK  | IKVVKN  | KVAPPF   | KEAVV            | EIMY   | GEGIS  | KTGEL  | LKIAS  | DLDI  | IKKAG | AWYSY  | KDE     | 313     |     |     |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1  | RLDVRG   | STQIKGTG | .DQKDTN | VGKETK  | IKVVKN  | KVAPPF   | KEAFV            | EIMY   | GEGIS  | KTGEL  | LKIAS  | DLDI  | IKKAG | AWYSY  | KDE     | 313     |     |     |
| NTDB id 499 SM12261 RS08315 WP 078228268.1  | RLDVRG   | STQIKGTG | .DQKDTN | VGKETK  | IKVVKN  | KVAPPF   | KEAFV            | EIMY   | GEGIS  | KTGEL  | LKIAS  | DLDI  | IKKAG | AWYSY  | KDE     | 313     |     |     |
| NTDB id 453 Spy49 1753c ACI62003.1          | RLDVRG   | TQIKGTG  | .DQKDSI | IGKETK  | IKVVKN  | KVAPPF   | KVAEV            | EIMY   | GEGIS  | RTGEL  | VKIAS  | DLDI  | IKKAG | AWFSY  | NGE     | 313     |     |     |
| NTDB id 408 SMU RS09530 WP 002262392.1      | RLDVRG   | NTQIKGTG | .EQKDSN | IGKETK  | IKVVKN  | KVAPPF   | KEAFV            | EIIY   | GEGIS  | RTGEL  | VKIAS  | DLGI  | IKKAG | AWYSY  | NGE     | 313     |     |     |
| NTDB id 115 BSU 16940 NP 389576.2           | RLEVRR   | AEQLKQGN | .....   | DVMGN   | KTIKVV  | VKNKVAPP | RTAEV            | DIMY   | GEGIS  | KEGEI  | IDL    | GTELD | IVQK  | SGSW   | SYEEE   | 294     |     |     |
| NTDB id 625 LCA RS02525 WP 011374196.1      | RLEVRR   | AETIKNGT | .....   | DMIGN   | RARIKVV | VKNKVAPP | KVAEV            | DIMY   | QGIS   | RTGEL  | VDMA   | VEKDI | INKSG | SWSYG  | SE      | 296     |     |     |
| NTDB id 1313 DR RS12030 WP 010888966.1      | RLDVRK   | IGQ....  | PTKVG   | NDAVANT | VKIKT   | VKNKVA   | APFKE            | VELA   | LVY    | GKGF   | DLSD   | LVGL  | AADMD | IIKKS  | GFYSY   | GDE     | 309 |     |
| NTDB id 1245 Cj1673c YP 002345041.1         | RLDVRK   | VAT....  | L.KQNE  | EEPIG   | NRVKKV  | VKNKVAPP | RQAEF            | DVMF   | GEGLS  | REGEL  | IDY    | GVKLD | IVDK  | SGAWF  | SYKDK   | 296     |     |     |
| NTDB id 1214 NCTC11637 00359 SQJ03206.1     | RIDIRRIA | A....    | L.KQNE  | EQHIGN  | RAKAKV  | VKNKVAPP | REA              | AEFD   | DIMF   | GEGIS  | KEGEI  | IDY   | GVKLD | IVDK   | SGAWLSY | QDK     | 298 |     |
| NTDB id 1211 C694 RS00795 WP 000963128.1    | RIDIRRIA | A....    | L.KQNE  | EQHIGN  | RAKAKV  | VKNKVAPP | REA              | AEFD   | DIMF   | GEGIS  | KEGEI  | IDY   | GVKLD | IVDK   | SGAWLSY | QDK     | 298 |     |
| NTDB id 1334 RAOC RS04870 WP 004918236.1    | RIDIRRS  | LSDTGKIK | DKSGEV  | IGNRTK  | VVKNKV  | VKNKVAPP | KS               | AEFD   | DIMY   | GEGV   | SKVGE  | ILDV  | ATDL  | DI     | IKKSGS  | WFSYQ   | DT  | 309 |
| NTDB id 1389 A4U84 RS07560 WP 021112712.1   | RLDIRRC  | GV....   | V.KDG   | DEIIG   | SETKV   | VKNKVAPP | REVQ             | FDIM   | YGEGIS | RMNELL | ILAE   | ANGF  | IKKSG | AWFSY  | DGT     | 312     |     |     |
| NTDB id 1130 NGFG RS03960 WP 003688695.1    | RLDIRRT  | TGS....  | I.KKG   | EEVLGN  | ETRVKK  | VKNKVAPP | RQAEF            | DILY   | GEGIS  | WE     | GELID  | IGVKN | DI    | INKSG  | AWYSY   | NGA     | 296 |     |
| NTDB id 1124 NGFG RS03960 WP 003688695.1    | RLDIRRT  | TGS....  | I.KKG   | EEVLGN  | ETRVKK  | VKNKVAPP | RQAEF            | DILY   | GEGIS  | WE     | GELID  | IGVKN | DI    | INKSG  | AWYSY   | NGA     | 296 |     |
| NTDB id 1123 OK783 RS03845 WP 003688695.1   | RLDIRRT  | TGS....  | I.KKG   | EEVLGN  | ETRVKK  | VKNKVAPP | RQAEF            | DILY   | GEGIS  | WE     | GELID  | IGVKN | DI    | INKSG  | AWYSY   | NGA     | 296 |     |
| NTDB id 1427 RS RS02760 WP 011000510.1      | RLDIRRI  | G....    | I.KKG   | DEVVGN  | ETKV    | VKNKVAPP | REA              | IFDILY | GAGV   | SR     | EGEII  | DLG   | VEAKV | VVEK   | SGAWSY  | NGE     | 304 |     |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1    | RLDIRRI  | G....    | V.KEG   | DEIVG   | SETKV   | VKNKMAPP | PFKEA            | IFQILY | GKGT   | NQLG   | ELVD   | LAV   | QQD   | IVQK   | AGAWSY  | QGN     | 295 |     |
| NTDB id 1022 ACIAD RS06390 WP 004925639.1   | RLDIRRI  | G....    | V.KEG   | DEIVG   | SETKV   | VKNKMAPP | PFREA            | IFQILY | GKGV   | NQLG   | ELVD   | LAV   | QQN   | IVQK   | AGAWSY  | QGN     | 295 |     |
| NTDB id 1165 A1552VC RS01565 WP 000344154.1 | RLDIRRT  | G....    | I.KEG   | EEVLGN  | ETRIKVV | KNKIA    | APFKE            | ANTQ   | IMY    | GGFNR  | REGEL  | IDL   | GVKHK | MVEK   | SGAWSY  | NGD     | 295 |     |
| NTDB id 1142 GTF74 RS11550 WP 000344154.1   | RLDIRRT  | G....    | I.KEG   | EEVLGN  | ETRIKVV | KNKIA    | APFKE            | ANTQ   | IMY    | GGFNR  | REGEL  | IDL   | GVKHK | MVEK   | SGAWSY  | NGD     | 295 |     |
| NTDB id 385289 FOQ17 RS02475 WP 005324574.1 | RLDIRRI  | G....    | I.KEG   | DEVVGN  | ETRV    | VKNKVAPP | PFKEA            | EFQIFY | GAGIS  | KEGEL  | VDL    | GVKHK | LIDK  | AGAWSY | NGE     | 295     |     |     |
| NTDB id 1205 PSJM300 05545 AFN77183.1       | RLDIRRT  | G....    | V.KEG   | DEVVGS  | ETRV    | VKNKVAPP | PFKEA            | EFQILY | GKGIY  | RNGE   | IIDL   | GV    | QQGL  | VEK    | SGAWAY  | AYKGS   | 295 |     |
| consensus                                   | !***!*   |          | *       | *       | *       | *        | ***!***!!*!!*!!* | *      | ***!*  | ***    | ***    | ***   | ***   | ***    | ***     | ! !***! |     |     |



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|                                             |        |                 |                |                |                |                |             |       |     |
|---------------------------------------------|--------|-----------------|----------------|----------------|----------------|----------------|-------------|-------|-----|
| NTDB id 600 KW2 RS01765 WP 011675413.1      | KIGQGA | EKAKNYLKEHQDV   | FEIDHKKVRAAHGL | LDDSEVAETEEETT | ASKTKAKAKKEEK  | AVETEEIELELED  | .....       | 387   |     |
| NTDB id 269 KZH43 RS08665 WP 001085462.1    | KIGQGS | ENAKKYLAEHPEIF  | DEIDKQVRSKFGL  | IDGEEVSEQDTENK | KDE....PKKEEA  | ..VNEEVPLDLGDE | LEIEIE      | 387   |     |
| NTDB id 228 SPD RS09265 WP 001085462.1      | KIGQGS | ENAKKYLAEHPEIF  | DEIDKQVRSKFGL  | IDGEEVSEQDTENK | KDE....PKKEEA  | ..VNEEVPLDLGDE | LEIEIE      | 387   |     |
| NTDB id 194 SPR RS08825 WP 001085462.1      | KIGQGS | ENAKKYLAEHPEIF  | DEIDKQVRSKFGL  | IDGEEVSEQDTENK | KDE....PKKEEA  | ..VNEEVPLDLGDE | LEIEIE      | 387   |     |
| NTDB id 159 SP RS09750 WP 001085462.1       | KIGQGS | ENAKKYLAEHPEIF  | DEIDKQVRSKFGL  | IDGEEVSEQDTENK | KDE....PKKEEA  | ..VNEEVPLDLGDE | LEIEIE      | 387   |     |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1  | KIGQGS | ENAKKYLADNPEV   | FAEIDHQVRVQFGL | IDGEEAAE....SK | KDE....VAQVDS  | ..VNEEVTLDLGDE | LEIEIE      | 383   |     |
| NTDB id 499 SM12261 RS08315 WP 078228268.1  | KIGQGS | ENAKKYLADNPEIF  | DEIDHQVRVQFGL  | IDGEEIAE....SK | KDE....AAQVDS  | ..VNEEVTLDLGDE | LEIEIE      | 383   |     |
| NTDB id 453 Spy49 1753c ACI62003.1          | KIGQGS | ENAKRYLADHPQLF  | DEIDRKVRVKFGL  | LEESEEEESAMAV  | ASE.....E..... | TDDLALDLDN     | GIEIED      | 378   |     |
| NTDB id 408 SMU RS09530 WP 002262392.1      | KIGQGS | ENAKKFLADNPEIF  | DDIDHKVRVQYGL  | IEEDNTEEKQSSKE | K.....ETDEK    | ..ADKNLVLELDD  | TIELED      | 383   |     |
| NTDB id 115 BSU 16940 NP 389576.2           | RLGQGR | ENAKQFLKENKDIM  | LMIQEQIREHYGL  | DNNGVVQQAEETQ  | EELEFE.E.....  | .....          | .....       | 348   |     |
| NTDB id 625 LCA RS02525 WP 011374196.1      | RIGQGR | ENAKNYLADHEDVE  | DEVRLKVRAAYG   | ISDVPEEDLPTTE  | DE.QI.NILPDDST | .....EE.....   | .....       | 355   |     |
| NTDB id 1313 DR RS12030 WP 010888966.1      | RIGQGK | EKTIAIYTAERP    | EMEQEIRDRVMAA  | IRAGNAGEAPAL   | APAPAAPEAAEA   | .....          | .....       | 363   |     |
| NTDB id 1245 Cj1673c YP 002345041.1         | KLGGGR | ENSKAFLKENPEI   | ADEITKAIQNSMG  | IEGMISGSE..DDE | ..GEE.....     | .....          | .....       | 343   |     |
| NTDB id 1214 NCTC11637 00359 SQJ03206.1     | KLGGGR | ENAKALLKEDKAL   | ADEITLKI       | KESIGSNEEIMPLP | ..DEP..LEEME   | .....          | .....       | 347   |     |
| NTDB id 1211 C694 RS00795 WP 000963128.1    | KLGGGR | ENAKALLKEDKAL   | ADEITLKI       | KESIGSNEEIMPLP | ..DEP..LEEME   | .....          | .....       | 347   |     |
| NTDB id 1334 RAOC RS04870 WP 004918236.1    | KLGGGR | DTVKELIKDNPE    | LAELEAKIREKLQ  | AK.....        | .....          | .....          | .....       | 343   |     |
| NTDB id 1389 A4U84 RS07560 WP 021112712.1   | KIGQGG | KNNAVKWLKENPEI  | ADKLEQEIRNTL   | ASNPNSVLKA..T  | ASD...SNDES    | DVEEF....SEEE  | ..L.....    | 372   |     |
| NTDB id 1130 NGFG RS03960 WP 003688695.1    | KIGQGG | KDNVRVWLKENPEI  | SDEIDAKIRALNG  | VEMHITEGT..QD  | ETD.....       | GERPEE.....    | .....       | 348   |     |
| NTDB id 1124 NGFG RS03960 WP 003688695.1    | KIGQGG | KDNVRVWLKENPEI  | SDEIDAKIRALNG  | VEMHITEGT..QD  | ETD.....       | GERPEE.....    | .....       | 348   |     |
| NTDB id 1123 OK783 RS03845 WP 003688695.1   | KIGQGG | KDNVRVWLKENPEI  | SDEIDAKIRALNG  | VEMHITEGT..QD  | ETD.....       | GERPEE.....    | .....       | 348   |     |
| NTDB id 1427 RS RS02760 WP 011000510.1      | RIGQGR | DNCREFLRENAEL   | AREIENKVREHLG  | VTPMGAVT...LA  | ....EEVEED     | .....          | .....       | 352   |     |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1    | KIGQGG | KNNVIRYFEENNQ   | IAEEIERNIREQL  | LTGTGTNGAVQ..I | ....EDEE       | EPDLLLE....S   | .....       | 349   |     |
| NTDB id 1022 ACIAD RS06390 WP 004925639.1   | KIGQGG | KNNVIRYLEENPQ   | ISTEIEAVIREQL  | LTKASDQTAA..H  | D....ETEE      | EPDLLES.....   | .....       | 349   |     |
| NTDB id 1165 A1552VC RS01565 WP 000344154.1 | KIGQGG | KANACKYLLKENPEI | AKTLDKKLREML   | LNPNENMQLIA..E | T.....SSA      | ADDVEF....GAV  | PEEF.....   | 354   |     |
| NTDB id 1142 GTF74 RS11550 WP 000344154.1   | KIGQGG | KANACKYLLKENPEI | AKTLDKKLREML   | LNPNENMQLIA..E | T.....SSA      | ADDVEF....GAV  | PEEF.....   | 354   |     |
| NTDB id 385289 FOQ17 RS02475 WP 005324574.1 | KIGQGG | KANVMKLF        | AKVMAAEVEARL   | RELLLSGAVP.VE  | K..PVA         | AAVEEFED       | ESEQEF....E | ..... | 353 |
| NTDB id 1205 PSJM300 05545 AFN77183.1       | KIGQGG | KANAACKYLL      | ENPEIGQIEQQIR  | AKLLVTSANTKAT  | ..PV...AED     | LADADI         | .....       | 347   |     |
| consensus                                   | **!!!  | *****           | **             | *****          | *****          | **             | **          |       |     |

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|---------------------------------------------|---|-----|
| 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 527 SMSK321 RS11065 WP 001085454.1  | E | 384 |
| NTDB id 499 SM12261 RS08315 WP 078228268.1  | E | 384 |
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consensus

 non conserved  
 similar  
 ≥ 50% conserved