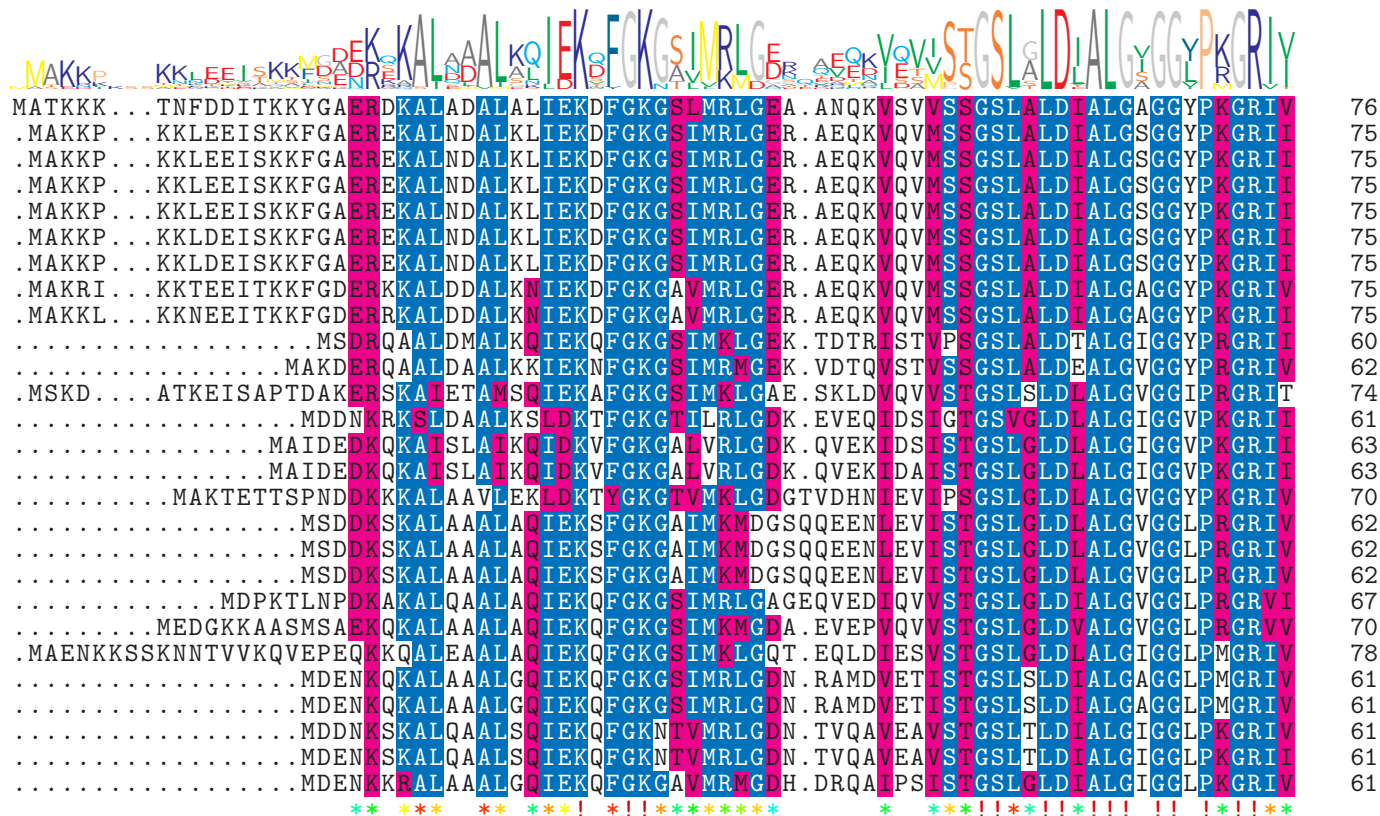


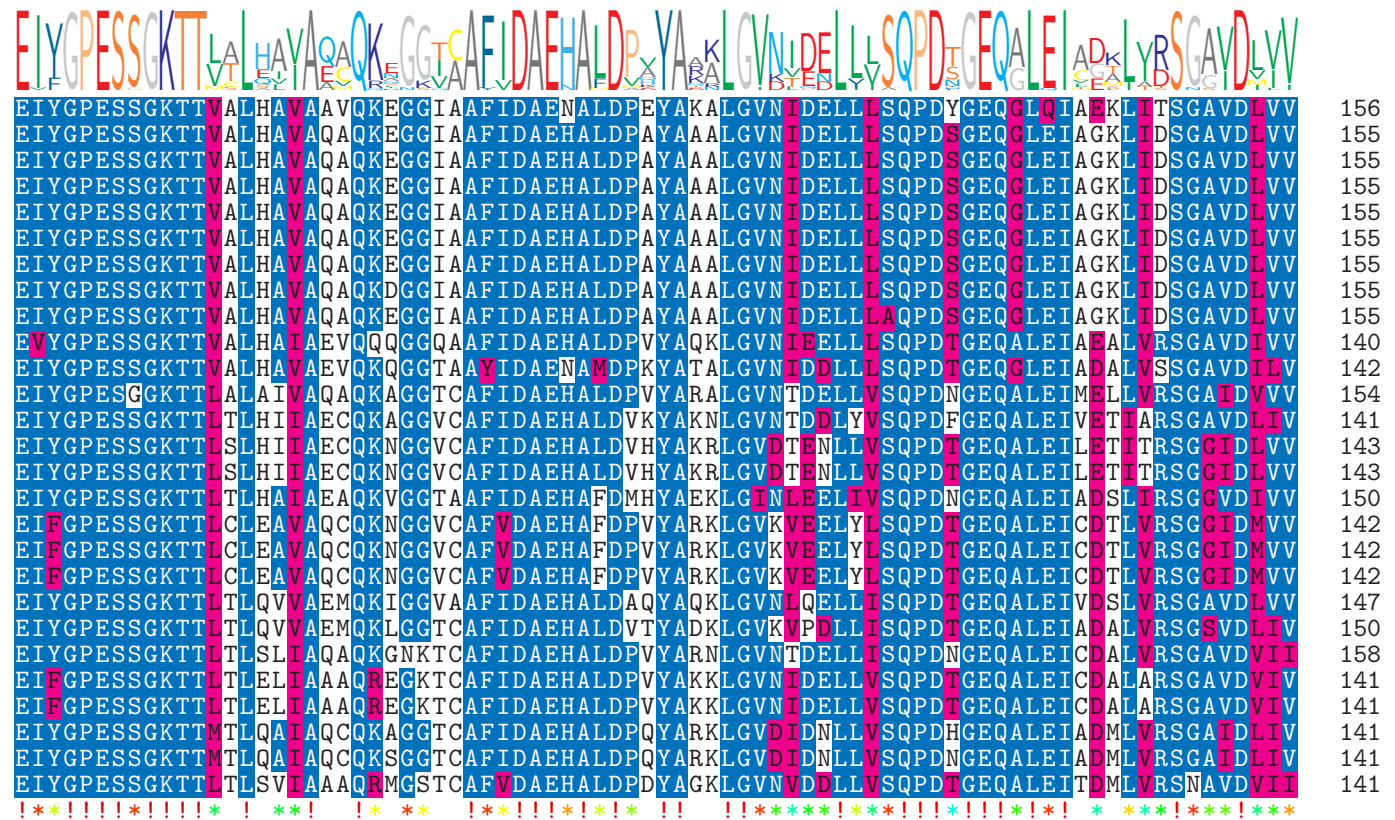
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NTDB id 115 BSU 16940 NP 389576.2  
NTDB id 625 LCA RS02525 WP 011374196.1  
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NTDB id 1165 A1552VC RS01565 WP 000344154.1  
NTDB id 1142 GTF74 RS11550 WP 000344154.1  
NTDB id 1022 ACIAD RS06390 WP 004925639.1  
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consensus



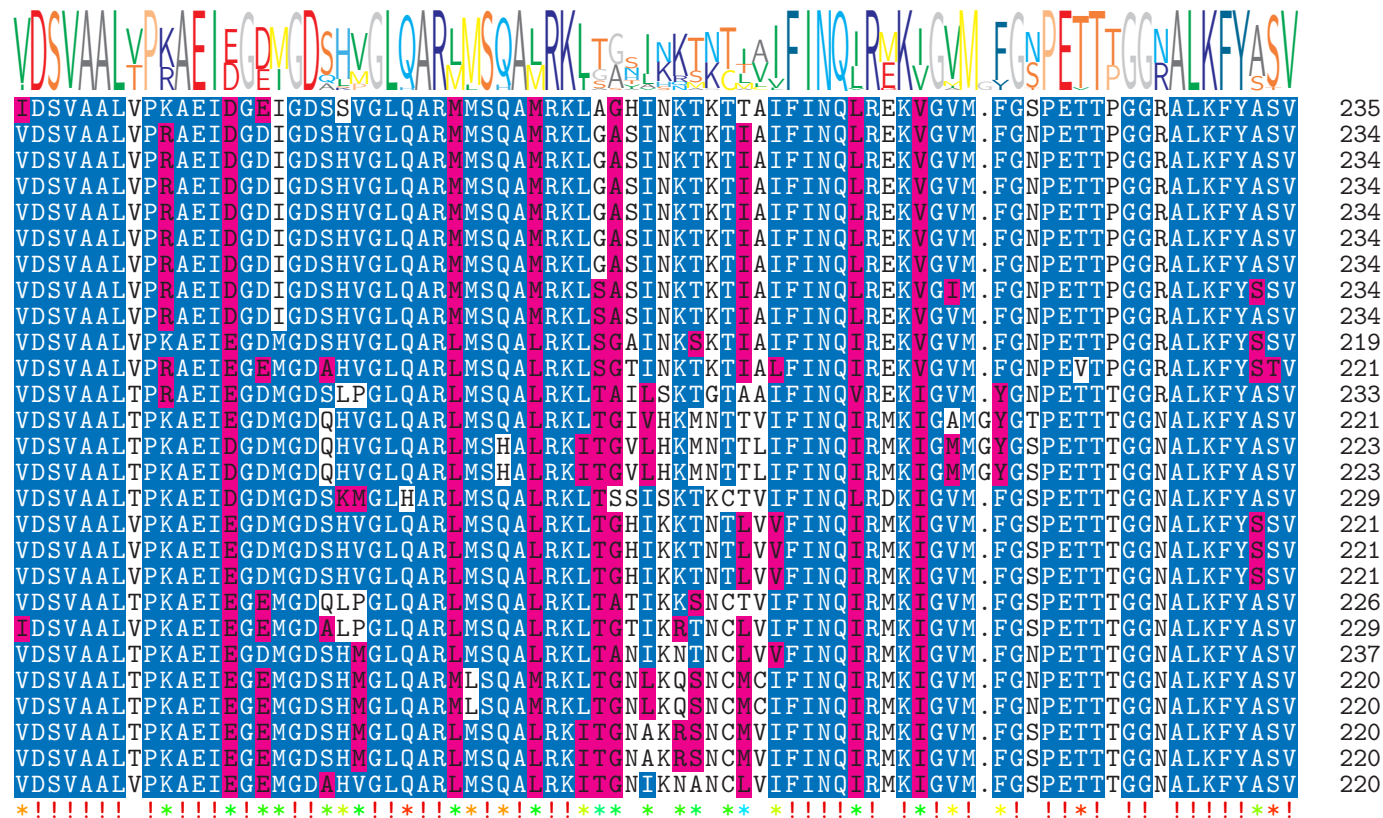
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NTDB id 1205 PSJM300 05545 AFN77183.1
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|---------------------------------------------|---------|----------|---------|--------|--------|----------|----------|----------|-------|-------|-------|-------|------|-------|-------|-----|-------|-------|-----|-----|
| NTDB id 600 KW2 RS01765 WP 011675413.1      | RLDVRG  | STKIEEGS | .GDNKTQ | IGKI   | TKIKVV | VKNKVAPP | PFKEA    | LV       | DIM   | F     | GEGIS | STGEL | IN   | IAVEE | GI    | TKK | SGAW  | FAY   | NDE | 314 |
| NTDB id 269 KZH43 RS08665 WP 001085462.1    | RLDVRG  | NTQIKGTG | .DQKETN | VGKETK | IKVV   | VKNKVAPP | PFKEA    | VV       | EIM   | Y     | GEGIS | KTGEL | LK   | IASD  | LD    | IKK | KAGAW | YSY   | KDE | 313 |
| NTDB id 228 SPD RS09265 WP 001085462.1      | RLDVRG  | NTQIKGTG | .DQKETN | VGKETK | IKVV   | VKNKVAPP | PFKEA    | VV       | EIM   | Y     | GEGIS | KTGEL | LK   | IASD  | LD    | IKK | KAGAW | YSY   | KDE | 313 |
| NTDB id 194 SPR RS08825 WP 001085462.1      | RLDVRG  | NTQIKGTG | .DQKETN | VGKETK | IKVV   | VKNKVAPP | PFKEA    | VV       | EIM   | Y     | GEGIS | KTGEL | LK   | IASD  | LD    | IKK | KAGAW | YSY   | KDE | 313 |
| NTDB id 159 SP RS09750 WP 001085462.1       | RLDVRG  | NTQIKGTG | .DQKETN | VGKETK | IKVV   | VKNKVAPP | PFKEA    | VV       | EIM   | Y     | GEGIS | KTGEL | LK   | IASD  | LD    | IKK | KAGAW | YSY   | KDE | 313 |
| NTDB id 499 SM12261 RS08315 WP 078228268.1  | RLDVRG  | STQIKGTG | .DQKDTN | VGKETK | IKVV   | VKNKVAPP | PFKEA    | FV       | EIM   | Y     | GEGIS | KTGEL | LK   | IASD  | LD    | IKK | KAGAW | YSY   | KDE | 313 |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1  | RLDVRG  | STQIKGTG | .DQKDTN | VGKETK | IKVV   | VKNKVAPP | PFKEA    | FV       | EIM   | Y     | GEGIS | KTGEL | LK   | IASD  | LD    | IKK | KAGAW | YSY   | KDE | 313 |
| NTDB id 408 SMU RS09530 WP 002262392.1      | RLDVRG  | NTQIKGTG | .EQKDSN | IGKETK | IKVV   | VKNKVAPP | PFKEA    | FV       | EII   | Y     | GEGIS | R     | TGEL | V     | K     | I   | A     | S     | D   | 313 |
| NTDB id 453 Spy49 1753c ACI62003.1          | RLDVRG  | TTQIKGTG | .DQKDSS | IGKETK | IKVV   | VKNKVAPP | PFKEA    | FV       | EIM   | Y     | GEGIS | R     | TGEL | V     | K     | I   | A     | S     | D   | 313 |
| NTDB id 115 BSU 16940 NP 389576.2           | RLEVRRA | AEQLKQGN | .....   | DV     | MGNK   | TKIKVV   | VKNKVAPP | PFRTA    | EVD   | DIM   | Y     | GEGIS | KEGE | IT    | DL    | G   | T     | E     | L   | 294 |
| NTDB id 625 LCA RS02525 WP 011374196.1      | RLEVRRA | ETIKNGT  | .....   | DM     | IGNRA  | RIKVV    | VKNKVAPP | PFKVA    | EVD   | DIM   | Y     | G     | Q    | GIS   | R     | T   | G     | E     | L   | 296 |
| NTDB id 1313 DR RS12030 WP 010888966.1      | RLDVRK  | IGQ....  | PTKVG   | ND     | AVANT  | VKIK     | TVKN     | KVA      | APFKE | V     | E     | L     | A    | L     | V     | Y   | G     | K     | G   | 309 |
| NTDB id 1245 Cj1673c YP 002345041.1         | RLDVRK  | VAT....  | L.KQN   | EEP    | IGNRV  | KVKV     | VKNKVAPP | PFQAE    | F     | D     | V     | M     | F    | G     | E     | G   | L     | S     | R   | 296 |
| NTDB id 1211 C694 RS00795 WP 000963128.1    | RIDIRRI | AS....   | L.KQN   | EQH    | IGNRA  | KA       | KVV      | VKNKVAPP | PFRE  | A     | E     | F     | D    | I     | M     | F   | G     | E     | G   | 298 |
| NTDB id 1214 NCTC11637 00359 SQJ03206.1     | RIDIRRI | AA....   | L.KQN   | EQH    | IGNRA  | KA       | KVV      | VKNKVAPP | PFRE  | A     | E     | F     | D    | I     | M     | F   | G     | E     | G   | 298 |
| NTDB id 1334 RAOC RS04870 WP 004918236.1    | RIDIRRS | LSDTG    | KIKDKS  | GEV    | IGNRT  | KVKV     | VKNKVAPP | PFKSA    | E     | F     | D     | I     | M    | Y     | G     | E   | G     | V     | S   | 309 |
| NTDB id 1130 NGFG RS03960 WP 003688695.1    | RLDIRR  | TGS....  | I.KKG   | EEV    | LGN    | ETRV     | KVKV     | IKNKVAPP | PFQAE | F     | D     | I     | L    | Y     | G     | E   | G     | I     | S   | 296 |
| NTDB id 1124 NGFG RS03960 WP 003688695.1    | RLDIRR  | TGS....  | I.KKG   | EEV    | LGN    | ETRV     | KVKV     | IKNKVAPP | PFQAE | F     | D     | I     | L    | Y     | G     | E   | G     | I     | S   | 296 |
| NTDB id 1123 OK783 RS03845 WP 003688695.1   | RLDIRR  | TGS....  | I.KKG   | EEV    | LGN    | ETRV     | KVKV     | IKNKVAPP | PFQAE | F     | D     | I     | L    | Y     | G     | E   | G     | I     | S   | 296 |
| NTDB id 239280 VITFI RS03760 WP 089415846.1 | RLDIRR  | IGS....  | I.KKG   | E      | D      | I        | GN       | ETRV     | KVV   | VKNKV | S     | P     | P    | F     | K     | E   | A     | E     | F   | 301 |
| NTDB id 1427 RS RS02760 WP 011000510.1      | RLDIRR  | IGS....  | I.KKG   | D      | E      | V        | GN       | ETK      | V     | V     | V     | V     | V    | V     | V     | V   | V     | V     | V   | 304 |
| NTDB id 1389 A4U84 RS07560 WP 021112712.1   | RLDIRR  | CGV....  | V.KDG   | D      | E      | I        | IG       | S        | E     | T     | K     | V     | V    | V     | V     | V   | V     | V     | V   | 312 |
| NTDB id 1165 A1552VC RS01565 WP 000344154.1 | RLDIRR  | TGA....  | I.KEG   | E      | E      | V        | GN       | ETRI     | KVV   | VKNK  | I     | A     | A    | P     | F     | K   | E     | A     | N   | 295 |
| NTDB id 1142 GTF74 RS11550 WP 000344154.1   | RLDIRR  | TGA....  | I.KEG   | E      | E      | V        | GN       | ETRI     | KVV   | VKNK  | I     | A     | A    | P     | F     | K   | E     | A     | N   | 295 |
| NTDB id 1022 ACIAD RS06390 WP 004925639.1   | RLDIRR  | IG....   | V.KEG   | D      | E      | I        | IG       | S        | E     | T     | K     | V     | V    | V     | V     | V   | V     | V     | V   | 295 |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1    | RLDIRR  | IG....   | V.KEG   | D      | E      | I        | IG       | S        | E     | T     | K     | V     | V    | V     | V     | V   | V     | V     | V   | 295 |
| NTDB id 1205 PSJM300 05545 AFN77183.1       | RLDIRR  | TGA....  | V.KEG   | D      | E      | V        | GS       | E        | T     | R     | V     | V     | V    | V     | V     | V   | V     | V     | V   | 295 |
| consensus                                   | !       | ***      | !       | *      |        |          | *        |          | *     | *     | ***** | !*    | ***  | !!    | ***** | !*  | ***   | ***** | !!  | 314 |

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|                                             |        |                 |                |                |                  |                |          |     |
|---------------------------------------------|--------|-----------------|----------------|----------------|------------------|----------------|----------|-----|
| NTDB id 600 KW2 RS01765 WP 011675413.1      | KIGQGA | EKAKNYLKEHQDV   | DEIDHKVRAAHG   | 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 499 SM12261 RS08315 WP 078228268.1  | KIGQGS | ENAKKYLADNPEIF  | DEIDHQVRVQFGL  | IDGEEIAES....  | KKDE....AAQVDS   | ..VNEEVTLDLGDE | LEIEIE   | 383 |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1  | KIGQGS | ENAKKYLADNPEV   | FAEIDHQVRVQFGL | IDGEEAAES....  | KKDE....VAQVDS   | ..VNEEVTLDLGDE | LEIEIE   | 383 |
| NTDB id 408 SMU RS09530 WP 002262392.1      | KIGQGS | ENAKKFLADNPEIF  | DDIDHKVRVQYGL  | IEDNTEEKQSSKE  | .....ETDEK       | ..ADKNLVLELDDT | IELED    | 383 |
| NTDB id 453 Spy49 1753c ACI62003.1          | KIGQGS | ENAKRYLADHPQLF  | DEIDRKVRVKFGL  | LEESEEEESAMAV  | ASE.....E        | .....TDDLALDL  | DNGIEIED | 378 |
| NTDB id 115 BSU 16940 NP 389576.2           | RLGQGR | ENAKQFLKENKDI   | MLMIQEIQIREHY  | GLDNNGVVQQAE   | ETQEEL.EFE.E     | .....          | .....    | 348 |
| NTDB id 625 LCA RS02525 WP 011374196.1      | RIGQGR | ENAKNYLADHEDV   | EVRLKVRAAYG    | ISDVPEEDLPTTE  | DE.QI.NILPDDST   | .....EE        | .....    | 355 |
| NTDB id 1313 DR RS12030 WP 010888966.1      | RIGQGK | EKTIAIYTAERP    | EMEQEIRDRVMA   | AIRAGNAGEAPAL  | APAP.AAP.....    | EAAE..A        | .....    | 363 |
| NTDB id 1245 Cj1673c YP 002345041.1         | KLGGGR | ENSKAFLKENPEI   | ADEITKAIQNSMG  | TEGMISGSEDD    | EGEE.....        | .....          | .....    | 343 |
| NTDB id 1211 C694 RS00795 WP 000963128.1    | KLGGGR | ENAKALLKEDKA    | LADAITLKIKES   | IGSNEEIIMPLP   | DEPLEEME         | .....          | .....    | 347 |
| NTDB id 1214 NCTC11637 00359 SQJ03206.1     | KLGGGR | ENAKALLKEDKA    | LADAITLKIKES   | IGSNEEIIMPLP   | DEPLEEME         | .....          | .....    | 347 |
| NTDB id 1334 RAOC RS04870 WP 004918236.1    | KLGGGR | DTVKELIKDNPE    | LAELEAKIREKL   | QAK.....       | .....            | .....          | .....    | 343 |
| NTDB id 1130 NGFG RS03960 WP 003688695.1    | KIGQGD | NVRVWLKENPEI    | SDEIDAKIRALNG  | VEMHITEGTQDET  | DGERP.....EE     | .....          | .....    | 348 |
| NTDB id 1124 NGFG RS03960 WP 003688695.1    | KIGQGD | NVRVWLKENPEI    | SDEIDAKIRALNG  | VEMHITEGTQDET  | DGERP.....EE     | .....          | .....    | 348 |
| NTDB id 1123 OK783 RS03845 WP 003688695.1   | KIGQGD | NVRVWLKENPEI    | SDEIDAKIRALNG  | VEMHITEGTQDET  | DGERP.....EE     | .....          | .....    | 348 |
| NTDB id 239280 VITFI RS03760 WP 089415846.1 | KIGQGD | NSREFLKENPEL    | AREIENRVRAHF   | GVPLLEAPAE     | .....            | .....          | .....    | 343 |
| NTDB id 1427 RS RS02760 WP 011000510.1      | RIGQGR | DNCREFLRENAEL   | AREIENKVVREHL  | GVTPMGAVTLAE   | EEVEED.....      | .....          | .....    | 352 |
| NTDB id 1389 A4U84 RS07560 WP 021112712.1   | KIGQGN | NNAVKWLKENPEI   | ADKLEQEIENR    | TLASNPNSVLKAT  | ASDSNDES....     | DVEE..FSEEEL   | .....    | 372 |
| NTDB id 1165 A1552VC RS01565 WP 000344154.1 | KIGQGN | ANACKYLVKENPEI  | AKTLDKKLREML   | LPENMQLIAETSS  | AADDV....EFGA    | ..VPEEF        | .....    | 354 |
| NTDB id 1142 GTF74 RS11550 WP 000344154.1   | KIGQGN | ANACKYLVKENPEI  | AKTLDKKLREML   | LPENMQLIAETSS  | AADDV....EFGA    | ..VPEEF        | .....    | 354 |
| NTDB id 1022 ACIAD RS06390 WP 004925639.1   | KIGQGN | NVIRYLEENPQIS   | TEIEAVIREQLLT  | KASDQTAHDETE   | EEEP....DLL...ES | .....          | .....    | 349 |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1    | KIGQGN | NVIRYFEENNQIA   | EEIERNIREQLLT  | TGTNGAVQ.I.EDE | EEP....DLL...LES | .....          | .....    | 349 |
| NTDB id 1205 PSJM300 05545 AFN77183.1       | KIGQGN | ANAACKYLVLENPEI | IGQIEEQIRAKLL  | VTSANTKATPVA   | EADLADA.....DI   | .....          | .....    | 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 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 1313 DR RS12030 WP 010888966.1      | . | 363 |
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| consensus                                   |   |     |

 non conserved  
 similar  
 ≥ 50% conserved