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|                                          |                                                                                        |    |
|------------------------------------------|----------------------------------------------------------------------------------------|----|
| NTDB id 601 KW2 RS02615 WP 021036805.1   | .....MLCQNCNINEAT.....I                                                                | 13 |
| NTDB id 281 KZH43 RS03550 WP 000882517.1 | .....MLCQNCNKINDST.....I                                                               | 13 |
| NTDB id 243 SPR RS03635 WP 000882517.1   | .....MLCQNCNKINDST.....I                                                               | 13 |
| NTDB id 245 SPD RS03860 WP 000882517.1   | .....MLCQNCNKINDST.....I                                                               | 13 |
| NTDB id 241 SP RS04015 WP 000882523.1    | .....MLCQNCNKINDST.....I                                                               | 13 |
| NTDB id 378 SMU RS02690 WP 002263569.1   | .....MLCQNCNKINEAT.....I                                                               | 13 |
| NTDB id 85 BSU 00860 NP 387967.1         | ..MMFGRFTERAQKVLALAQEEALRLGHNNIGTEHILLGLVREGEGIAAKALQALGLGSEKIQKEVESLIG.....RGQEMS     | 75 |
| NTDB id 610 V4T04 RS10165 WP 012897346.1 | MKFENIKYPTPTLDRILEKAEYYAHQYQYGTIESAHLIAAMATTSGSIAYSLLAGMNVDSDDLIDL.....EDLSSHVKVKR     | 77 |
| NTDB id 287 SP RS11210 WP 001109712.1    | .....MNYSKALNECIESAYMVAGHFGARYLESWHLLIAMSNHSYSVAGATLNDYPYEMDRLE.....EVALELTETDYSQDET   | 75 |
| NTDB id 290 KZH43 RS10025 WP 001109677.1 | .....MNYSKALNECIESAYMVAGHFGARYLESWHLLIAMSNHSYSVAGATLNDYPYEMDRLE.....EVALELTETDYSQDET   | 75 |
| NTDB id 289 SPD RS10700 WP 001109677.1   | .....MNYSKALNECIESAYMVAGHFGARYLESWHLLIAMSNHSYSVAGATLNDYPYEMDRLE.....EVALELTETDYSQDET   | 75 |
| NTDB id 377 SMU RS09275 WP 002262344.1   | ....MTDYSLKMQEVFRLAQFEAAERFESSYLESWHVLLAMVEIDSSVAGLSFAEFADVRFEDYQAAAILAIGKKPKSSSN..DI  | 79 |
| NTDB id 297 STER RS00545 WP 011680614.1  | ....MTIYSRKMQAIFHRAQLEAERFESPFLLETWHVLLAMVEVTGSAVYLTFTDFEDRIHSEEIETAAVLAMEKRPKDLSESDII | 81 |
| NTDB id 329 STU RS10020 WP 011225298.1   | ....MTIYSRKMQAIFHRAQLEAERFESPFLLETWHVLLAMVEVPGSAVYLTFTDFEDRIHSEEIETAAVLAMEKRPKDLSESDII | 81 |
| consensus                                | *** * * * * ** *                                                                       |    |

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| NTDB id 601 KW2 RS02615 WP 021036805.1   | HLYTSVNGQKKQIDLCQNCYQI...MKSQGGQALFGAGNASNGNSDE.....PFNP.FNDIFSALQG.QDFNGAASN.         | 80  |
| NTDB id 281 KZH43 RS03550 WP 000882517.1 | HLYTNLNGKQKQIDLCQNCYKI...IKTDPNNSLFKGMTDLNNRD.....FDP.FGDDFFNDLNNFRPSSN..TP.           | 76  |
| NTDB id 243 SPR RS03635 WP 000882517.1   | HLYTNLNGKQKQIDLCQNCYKI...IKTDPNNSLFKGMTDLNNRD.....FDP.FGDDFFNDLNNFRPSSN..TP.           | 76  |
| NTDB id 245 SPD RS03860 WP 000882517.1   | HLYTNLNGKQKQIDLCQNCYKI...IKTDPNNSLFKGMTDLNNRD.....FDP.FGDDFFNDLNNFRPSSN..TP.           | 76  |
| NTDB id 241 SP RS04015 WP 000882523.1    | HLYTNLNGKQKQIDLCQNCYKI...IKTDPNNSLFKGMTDLNNRD.....FDP.FGDDFFNDLNNFRPSSN..TP.           | 76  |
| NTDB id 378 SMU RS02690 WP 002263569.1   | HLYANVNGQKKQIDLCQNCYQI...MKTDPENGPLNHLSSQNNSS.....INPFDDFFGDLNNFRFANNQDLP.             | 79  |
| NTDB id 85 BSU 00860 NP 387967.1         | QTIHYTPRAKKVIELSMDEARKLGHSYVGTEHILLGLIREGEGVAARVILNNLGVSLNKARQQVLQL.....LGSNET....     | 147 |
| NTDB id 610 V4T04 RS10165 WP 012897346.1 | STLRFSPRAEEVMTAASFLAIHNNSEAVGTEHLLYALLQVEDGFGLQLKL.....QKINIVSLRKELEKRTGLKVPESKK       | 153 |
| NTDB id 287 SP RS11210 WP 001109712.1    | TELPFSRRLQVLFDAAEYVASVHAKVLGTEHVLYAILHDSNALATRILERAGFSYEDKKDQVKIAALRRNLEERAGWTREDLKA   | 160 |
| NTDB id 290 KZH43 RS10025 WP 001109677.1 | TELPFSRRLQILFDAAEYVASVHAKVLGTEHVLYAILHDSNALATRILERAGFSYEDKKDQVKIAALRRNLEERAGWTREDLKA   | 160 |
| NTDB id 289 SPD RS10700 WP 001109677.1   | TELPFSRRLQILFDAAEYVASVHAKVLGTEHVLYAILHDSNALATRILERAGFSYEDKKDQVKIAALRRNLEERAGWTREDLKA   | 160 |
| NTDB id 377 SMU RS09275 WP 002262344.1   | MILEQSHALKRTIAEAAAIISQVTHAKEVGTEHVLFAMLLNPNLLATRILELVGFHAKDDGESIRLLDLRKVTERYACFSKEDIKA | 164 |
| NTDB id 297 STER RS00545 WP 011680614.1  | DLRAQSPALEAMLQEAQEIASVTGAVEVGSEHVLMFAFLHKLMLVCRLLEVAGFQYKDDSDKPRIIDLRRSLERNAGLSKQDLKA  | 166 |
| NTDB id 329 STU RS10020 WP 011225298.1   | DLRAQSPALEAMLQEAQGIASVTGAVEVGSEHVLMFAFLHKLMLVCRLLEVAGFQYKDDSDKPRIIDLRRSLERNAGLSKQDLKA  | 166 |
| consensus                                | * ** * * * * * * * * * * * * * * *                                                     |     |

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| NTDB id 601 KW2 RS02615 WP 021036805.1   | ....QTPPTQTGG.....RGPRGPQNPRAKQPKGMLEEFGINITESARRGEIDPVIGRDEEIKRVIEILNRRRTKNNPVL      | 151 |
| NTDB id 281 KZH43 RS03550 WP 000882517.1 | ....PIPTTQSGGGYGGNGGYGSQNRGSAQTTPPSQEKGLLEEFGINVTEIARRGIDPVIGRDDEIIRVIEILNRRRTKNNPVL  | 157 |
| NTDB id 243 SPR RS03635 WP 000882517.1   | ....PIPTTQSGGGYGGNGGYGSQNRGSAQTTPPSQEKGLLEEFGINVTEIARRGIDPVIGRDDEIIRVIEILNRRRTKNNPVL  | 157 |
| NTDB id 245 SPD RS03860 WP 000882517.1   | ....PIPTTQSGGGYGGNGGYGSQNRGSAQTTPPSQEKGLLEEFGINVTEIARRGIDPVIGRDDEIIRVIEILNRRRTKNNPVL  | 157 |
| NTDB id 241 SP RS04015 WP 000882523.1    | ....PIPTTQSGGGYGGNGGYGSQNRGSAQTTPPSQEKGLLEEFGINVTEIARRGIDPVIGRDDEIIRVIEILNRRRTKNNPVL  | 157 |
| NTDB id 378 SMU RS02690 WP 002263569.1   | ....NTPPTQAGGGNGNGGN.N.RRPGGPQQQASQKPNGLLEEFGINLTDIARKGEIDPVIGRDEEITRVIEILNRRRTKNNPVL | 158 |
| NTDB id 85 BSU 00860 NP 387967.1         | .....GSSAAGTNSNANTPTLDSLARDLTAIAKEDSLDPVIGRSKEIQRVIEVLSRRTKNNPVL                      | 207 |
| NTDB id 610 V4T04 RS10165 WP 012897346.1 | AVTPMSKRKMAKG.....VAENSTPTLDSVSSDLTEEARLCKLDPMIGRAEIDRIIHLISRRTKNNPVL                 | 220 |
| NTDB id 287 SP RS11210 WP 001109712.1    | .LRQRHRTV.ADK.....QNSMANMMGMPTPSGGLEDYTHDLTEQARSCKLEPVIGRDKEISRMQILSRKTNNPVL          | 233 |
| NTDB id 290 KZH43 RS10025 WP 001109677.1 | .LRQRHRTV.ADK.....QNSMANMMGMPTPSGGLEDYTHDLTEQARSCKLEPVIGRDKEISRMQILSRKTNNPVL          | 233 |
| NTDB id 289 SPD RS10700 WP 001109677.1   | .LRQRHRTV.ADK.....QNSMANMMGMPTPSGGLEDYTHDLTEQARSCKLEPVIGRDKEISRMQILSRKTNNPVL          | 233 |
| NTDB id 377 SMU RS09275 WP 002262344.1   | .IFEMRKPKKVKN.....SSFSFLMKPP.SVTGELADFTRLTELARQGRLEPVIGRDEEISRMVQILSRKTNNPVL          | 237 |
| NTDB id 297 STER RS00545 WP 011680614.1  | .IHDLRKPKKSKA.....SANFANMMQPPQSSTGELADYTKDLTALAESGNLDPVIGRDEEISRMQIVLSRKTNNPVL        | 240 |
| NTDB id 329 STU RS10020 WP 011225298.1   | .IHDLRKPKKSKA.....SANFANMMQPPQSSTGELADYTKDLTALAESGNLDPVIGRDEEISRMQIVLSRKTNNPVL        | 240 |
| consensus                                | * * * * * ! * * * * * * * * * * * * * * *                                             |     |







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| NTDB id 601 KW2 RS02615 WP 021036805.1   | ENLLKIVDLMLDEVNEQIGRNDIHLSTVTTQAAKEKLVLDLGYNPAMGARPLRRTIQENTIEDSTADFFYTEHPEYKQ.LVADLIDDKIV | 729 |
| NTDB id 281 KZH43 RS03550 WP 000882517.1 | DNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKLVLDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKD.LKAVMTSKGNI     | 735 |
| NTDB id 243 SPR RS03635 WP 000882517.1   | DNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKLVLDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKD.LKAVMTSKGNI     | 735 |
| NTDB id 245 SPD RS03860 WP 000882517.1   | DNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKLVLDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKD.LKAVMTSKGNI     | 735 |
| NTDB id 241 SP RS04015 WP 000882523.1    | DNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKLVLDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKD.LKAVMTSKGNI     | 735 |
| NTDB id 378 SMU RS02690 WP 002263569.1   | DNLLQIVSLMLDDVNQRLAVNAIHLDVTDKVKEKLVLDLGYDPKMGARPLRRTIQEHIEDAITDFYLEHPEQKE.LKAIMTSNCKI     | 736 |
| NTDB id 85 BSU 00860 NP 387967.1         | KHLTEIVSLMSDQLTKRLKEQDLSTIELTDAAKAKVAEEGVLDLEYGARPLRRAIQKHVEDRLSEELLRGNIHKGQHIVLDVEDGEF    | 801 |
| NTDB id 610 V4T04 RS10165 WP 012897346.1 | QEIEQIVKIMSKSLIKRLAEQDIHVKLTPSAVKLIAEVGFDPEYGARPLRKALQKEVEDLLSEQLLSGETKAGNHVSTIGASNKKI     | 810 |
| NTDB id 287 SP RS11210 WP 001109712.1    | DHMQEVVKIMVKPLVASLTEKGIDLKLQASALKLLANQGYDPEMGARPLRRTLQTEVEDKLAELLKGDIVAGSTLKIGVKAGQL       | 805 |
| NTDB id 290 KZH43 RS10025 WP 001109677.1 | DHMQEVVKIMVKPLVASLAEKGIDLKLQASALKLLANQGYDPEMGARPLRRTLQTEVEDKLAELLKGDIVAGSTLKIGVKAGQL       | 805 |
| NTDB id 289 SPD RS10700 WP 001109677.1   | DHMQEVVKIMVKPLVASLAEKGIDLKLQASALKLLANQGYDPEMGARPLRRTLQTEVEDKLAELLKGDIVAGSTLKIGVKAGQL       | 805 |
| NTDB id 377 SMU RS09275 WP 002262344.1   | EDIRHIVKIMVAPLIAHLADQGITLKFQPSALKHLALAGYDAEMGARPLRRTLQTEVEDKLAELLTSGKLASGQTLKIGIQKEKL      | 808 |
| NTDB id 297 STER RS00545 WP 011680614.1  | EQLHDIVKIMVKPLISALADKGISLKFQPAALKHLAKDGYDIEMGARPLRRTIQTQVEDKLSLELLGGQVVSQQTLLKIGCSKDKL     | 811 |
| NTDB id 329 STU RS10020 WP 011225298.1   | EQLHDIVKIMVKPLISALADKGISLKFQPAALKHLAKDGYDIEMGARPLRRTIQTQVEDKLSLELLGGQVVSQQTLLKIGCSKDKL     | 811 |
| consensus                                | *** *! *!* * **** * * * * !*****!!!!!!* *! *** * * * * * * * *                             |     |

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| NTDB id 601 KW2 RS02615 WP 021036805.1   | ISNQTQETAETTDEEVP    | 748 |
| NTDB id 281 KZH43 RS03550 WP 000882517.1 | QIKSAKKA.EVKSSSEKEK. | 752 |
| NTDB id 243 SPR RS03635 WP 000882517.1   | QIKSAKKA.EVKSSSEKEK. | 752 |
| NTDB id 245 SPD RS03860 WP 000882517.1   | QIKSAKKA.EVKSSSEKEK. | 752 |
| NTDB id 241 SP RS04015 WP 000882523.1    | QIKSAKKA.EVKSSSEKEK. | 752 |
| NTDB id 378 SMU RS02690 WP 002263569.1   | VIKASNKV.ETVTKATSD.  | 753 |
| NTDB id 85 BSU 00860 NP 387967.1         | VVKTTAKTN.....       | 810 |
| NTDB id 610 V4T04 RS10165 WP 012897346.1 | KIAQIV.....          | 816 |
| NTDB id 287 SP RS11210 WP 001109712.1    | KFDIA.....           | 810 |
| NTDB id 290 KZH43 RS10025 WP 001109677.1 | KFDIA.....           | 810 |
| NTDB id 289 SPD RS10700 WP 001109677.1   | KFDIA.....           | 810 |
| NTDB id 377 SMU RS09275 WP 002262344.1   | KFDIV.....           | 813 |
| NTDB id 297 STER RS00545 WP 011680614.1  | TFTVV.....           | 816 |
| NTDB id 329 STU RS10020 WP 011225298.1   | TFTVV.....           | 816 |
| consensus                                |                      |     |

- ⓧ non conserved
- ✖ similar
- ⓧ ≥ 50% conserved