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|---------------------------------------------|-----------------------------------------------------------------------------------|----|
| NTDB id 85 BSU 00860 NP 387967.1            | ..MMFGRFTERAQKVLALAQEEALRLGHNNIGTEHLLGLVREGEGIAAKALQALGLGSEKIQKEVESLI.....GR      | 70 |
| NTDB id 983608 NSQ11 RS06835 WP 058213826.1 | .....MRCQHCVNEATIRLNMQVN.....S.                                                   | 21 |
| NTDB id 601 KW2 RS02615 WP 021036805.1      | .....MLCQNCNINEATIHLYTSVN.....G.                                                  | 21 |
| NTDB id 378 SMU RS02690 WP 002263569.1      | .....MLCQNCNINEATIHLYANVN.....G.                                                  | 21 |
| NTDB id 281 KZH43 RS03550 WP 000882517.1    | .....MLCQNCNINEATIHLYTNLN.....G.                                                  | 21 |
| NTDB id 245 SPD RS03860 WP 000882517.1      | .....MLCQNCNINEATIHLYTNLN.....G.                                                  | 21 |
| NTDB id 243 SPR RS03635 WP 000882517.1      | .....MLCQNCNINEATIHLYTNLN.....G.                                                  | 21 |
| NTDB id 241 SP RS04015 WP 000882523.1       | .....MLCQNCNINEATIHLYTNLN.....G.                                                  | 21 |
| NTDB id 610 V4T04 RS10165 WP 012897346.1    | MKFENIKYPTLDRILEKAEYAHQYQYGTIESAHLAAMATTSGSIAYSLLAGMNVDSDDLIDL.....EDLSSH         | 72 |
| NTDB id 287 SP RS11210 WP 001109712.1       | .....MNYSKALNECIESAYMVAGHFGARYLESWHLLIAMSNSHSYSVAGATLNDYPYEMDRLE.....EVALELTETDYS | 70 |
| NTDB id 290 KZH43 RS10025 WP 001109677.1    | .....MNYSKALNECIESAYMVAGHFGARYLESWHLLIAMSNSHSYSVAGATLNDYPYEMDRLE.....EVALELTETDYS | 70 |
| NTDB id 289 SPD RS10700 WP 001109677.1      | .....MNYSKALNECIESAYMVAGHFGARYLESWHLLIAMSNSHSYSVAGATLNDYPYEMDRLE.....EVALELTETDYS | 70 |
| NTDB id 377 SMU RS09275 WP 002262344.1      | ...MTDYSLKMQEVFRLAQFEAARFESSYLESWHVLLAMVEIDSSVAGLSFAEFEADVRFEDYQAAAILAIGKKPKSSS   | 76 |
| NTDB id 297 STER RS00545 WP 011680614.1     | ...MTIYSRKMQAIFHRAQLEAERFESPFLLETWHVLLAMVEVPGSVAYLTFTDFEDRIHSEEIETAAVLAMEKRPKDLS  | 76 |
| NTDB id 329 STU RS10020 WP 011225298.1      | ...MTIYSRKMQAIFHRAQLEAERFESPFLLETWHVLLAMVEVPGSVAYLTFTDFEDRIHSEEIETAAVLAMEKRPKDLS  | 76 |
| consensus                                   | .....*.....*                                                                      |    |

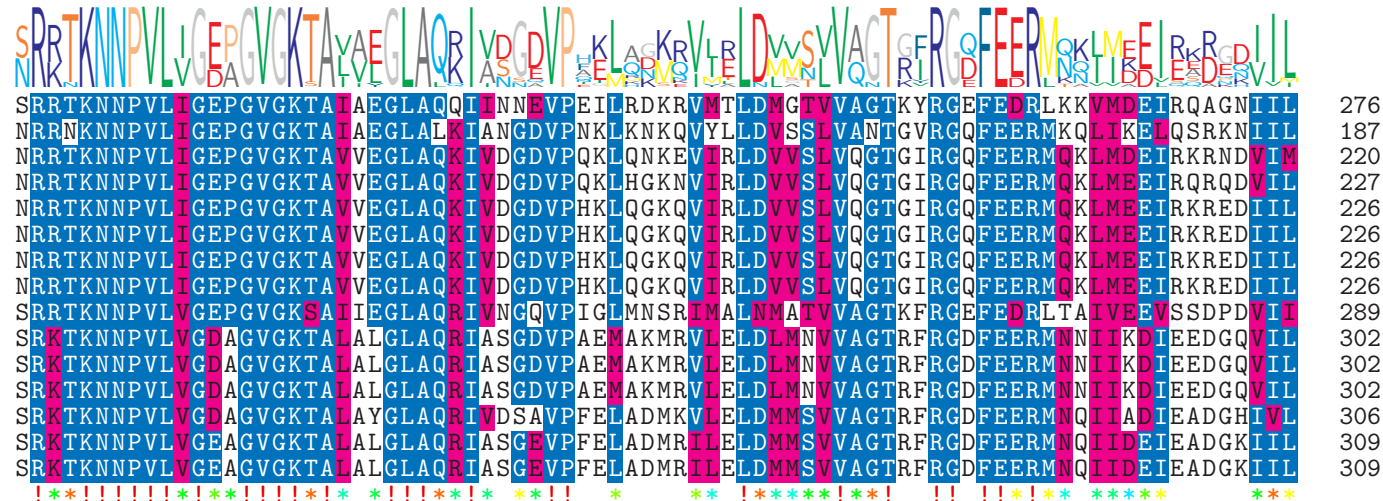
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|---------------------------------------------|------------------------------------------------------------------------------------|-----|
| NTDB id 85 BSU 00860 NP 387967.1            | GQEMSQTIHYTPRAKKVIELSMDEARKIGHSYVGEHILLGLIREGEGVAA...R.....VLNNLGVSLNKA            | 134 |
| NTDB id 983608 NSQ11 RS06835 WP 058213826.1 | .....SRSQMVLCEDCYTSL...MEQSKMK.....M.....                                          | 44  |
| NTDB id 601 KW2 RS02615 WP 021036805.1      | .....KQKQIDLCQNCYQIM...KSGGQEALEFGAGNASNGNSDEPFNP.....FNDIFSAIQGQ                  | 72  |
| NTDB id 378 SMU RS02690 WP 002263569.1      | .....KQKQIDLCQNCYQIM...KTDPENGPLNHLSSQNSSS...INP.....FFDDFFGDLNNF                  | 70  |
| NTDB id 281 KZH43 RS03550 WP 000882517.1    | .....KQKQIDLCQNCYQIM...KTDPNNSLFKGMTDLNNRD...FDP.....FGDFFNDLNNF                   | 69  |
| NTDB id 245 SPD RS03860 WP 000882517.1      | .....KQKQIDLCQNCYQIM...KTDPNNSLFKGMTDLNNRD...FDP.....FGDFFNDLNNF                   | 69  |
| NTDB id 243 SPR RS03635 WP 000882517.1      | .....KQKQIDLCQNCYQIM...KTDPNNSLFKGMTDLNNRD...FDP.....FGDFFNDLNNF                   | 69  |
| NTDB id 241 SP RS04015 WP 000882523.1       | .....KQKQIDLCQNCYQIM...KTDPNNSLFKGMTDLNNRD...FDP.....FGDFFNDLNNF                   | 69  |
| NTDB id 610 V4T04 RS10165 WP 012897346.1    | VKVKRSTLRFSPRAEEVMTAASFLAIHNNSEAVGTEHLLYALLQVEDGFGQLQLKL.....QKINIVSLRKELEKR       | 143 |
| NTDB id 287 SP RS11210 WP 001109712.1       | QDETFTTELPFSRRLQVLFDEAEYVASVVHAKVLGTEHVLVYAILHDSNALATRILERAGFSYEDKKDQVKIAALRRNLEER | 150 |
| NTDB id 290 KZH43 RS10025 WP 001109677.1    | QDETFTTELPFSRRLQILFDEAEYVASVVHAKVLGTEHVLVYAILHDGNALATRILERAGFSYEDKKDQVKIAALRRNLEER | 150 |
| NTDB id 289 SPD RS10700 WP 001109677.1      | QDETFTTELPFSRRLQILFDEAEYVASVVHAKVLGTEHVLVYAILHDGNALATRILERAGFSYEDKKDQVKIAALRRNLEER | 150 |
| NTDB id 377 SMU RS09275 WP 002262344.1      | N..DIMLLEQSHALKRTLAEAAAISSVTHAKEVGEHVLMAFLNPNLLATRILELVGFHAKDDGESIRLLDLRKVIERY     | 154 |
| NTDB id 297 STER RS00545 WP 011680614.1     | ESDIIDLRAQSPAELAMLQEAQGIASVTGAVEVGEHVLMAFLNPNLLATRILELVGFHAKDDGESIRLLDLRRSLERN     | 156 |
| NTDB id 329 STU RS10020 WP 011225298.1      | ESDIIDLRAQSPAELAMLQEAQGIASVTGAVEVGEHVLMAFLNPNLLATRILELVGFHAKDDGESIRLLDLRRSLERN     | 156 |
| consensus                                   | .....**.....**.....*.....*                                                         |     |

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NTDB id 85 BSU 00860 NP 387967.1
NTDB id 983608 NSQ11 RS06835 WP 058213826.1
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NTDB id 290 KZH43 RS10025 WP 001109677.1
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consensus

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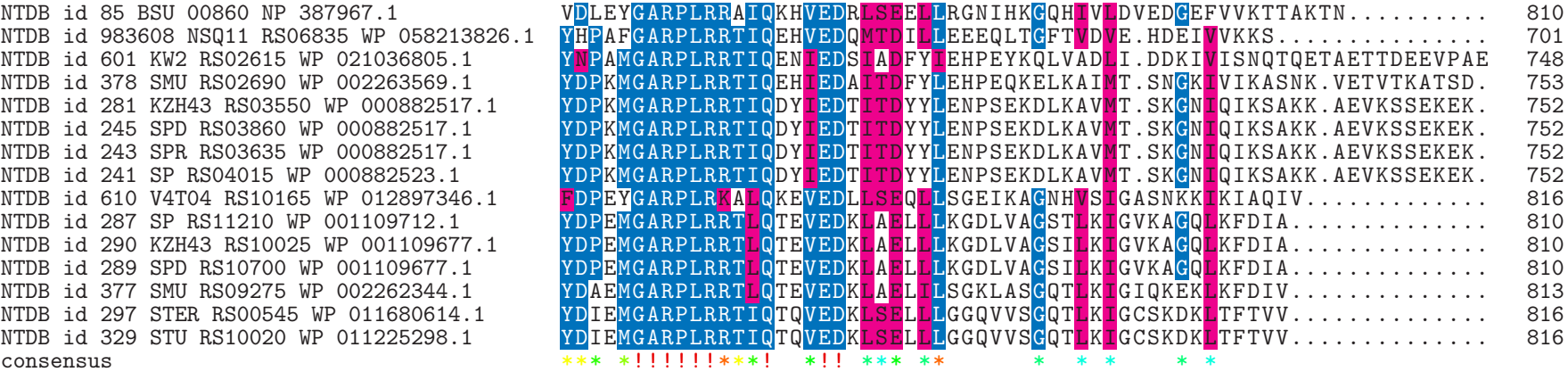
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|---------------------------------------------|------------------------------------------------------------------------------------|-----|
| NTDB id 85 BSU 00860 NP 387967.1            | YDEGGQLTEKVRNKPYSVLLDEIEKAHPDVFNILLQVLEDGRLTDSKGRTVDFRNTILIMTSNVGASELKRKNKYVGFNV   | 675 |
| NTDB id 983608 NSQ11 RS06835 WP 058213826.1 | HDEAGQLTEKVRNKPYSIILLDEIEKAHPDVQHMFLQIMEDGRLTDSQGRTVSFKDVTIIMTSNAGSTDKKA.VKVGFQS   | 575 |
| NTDB id 601 KW2 RS02615 WP 021036805.1      | YEEAGQLTERVRNKPYSIILLDEIEKAHPDVMMHFLQILEDGRLTDAQGRTVSFKDSLIIIMTSNAGTGKV.E.ASVGFGA  | 609 |
| NTDB id 378 SMU RS02690 WP 002263569.1      | YEEAGQLTEKVRNKPYSIILLDEVEKAHPDVMHMFLLQVLDDGRLTDGQGRTVSFKDTIIIMTSNAGTGKS.E.ANVGFGA  | 616 |
| NTDB id 281 KZH43 RS03550 WP 000882517.1    | YDEAGQLTEKVRHNKPYSIILLDEVEKAHPDVMHMFLLQVLDDGRLTDGQGRTVSFKDAIIIMTSNAGTGKT.E.ASVGFGA | 615 |
| NTDB id 245 SPD RS03860 WP 000882517.1      | YDEAGQLTEKVRHNKPYSIILLDEVEKAHPDVMHMFLLQVLDDGRLTDGQGRTVSFKDAIIIMTSNAGTGKT.E.ASVGFGA | 615 |
| NTDB id 243 SPR RS03635 WP 000882517.1      | YDEAGQLTEKVRHNKPYSIILLDEVEKAHPDVMHMFLLQVLDDGRLTDGQGRTVSFKDAIIIMTSNAGTGKT.E.ASVGFGA | 615 |
| NTDB id 241 SP RS04015 WP 000882523.1       | YDEAGQLTEKVRHNKPYSIILLDEVEKAHPDVMHMFLLQVLDDGRLTDGQGRTVSFKDAIIIMTSNAGTGKT.E.ASVGFGA | 615 |
| NTDB id 610 V4T04 RS10165 WP 012897346.1    | YDEGGQLTERVRNKPYSVLLDEVEKAHPDVFNIMLQILDDGFVTDTKGRKVDFRNTIIIMTSNLGATALRDDKTVGFGA    | 684 |
| NTDB id 287 SP RS11210 WP 001109712.1       | YEEGGELTEKVRNKPYSVLLFDEVEKAHPDIFNVLLQVLDDGVLTDSKGRKVDFSNTIIIMTSNLGATALRDDKTVGFGA   | 679 |
| NTDB id 290 KZH43 RS10025 WP 001109677.1    | YEEGGELTEKVRNKPYSVLLFDEVEKAHPDIFNVLLQVLDDGVLTDSKGRKVDFSNTIIIMTSNLGATALRDDKTVGFGA   | 679 |
| NTDB id 289 SPD RS10700 WP 001109677.1      | YEEGGELTEKVRNKPYSVLLFDEVEKAHPDIFNVLLQVLDDGVLTDSKGRKVDFSNTIIIMTSNLGATALRDDKTVGFGA   | 679 |
| NTDB id 377 SMU RS09275 WP 002262344.1      | YEEGGELTEKVRNKPYSVLLFDEVEKAHPDIFNILLQVLDDGVLTDSRGRKVDFSNTIIIMTSNLGATALRDDKTVGFGA   | 682 |
| NTDB id 297 STER RS00545 WP 011680614.1     | YDEGGELTEKVRNKPYSVLLFDEIEKAHPDIFNILLQVLDDGVLTDSRGRKVDFSNTIIIMTSNLGATALRDDKTVGFGA   | 685 |
| NTDB id 329 STU RS10020 WP 011225298.1      | YDEGGELTEKVRNKPYSVLLFDEIEKAHPDIFNVLLQVLDDGVLTDSRGRKVDFSNTIIIMTSNLGATALRDDKTVGFGA   | 685 |
| consensus                                   | *****!!*!! *!!!!*!!*!!!!!!* * !*****! *!!* !! ! !* ****!!!! ! * *** *!!!!*         |     |

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|---------------------------------------------|-------------------------------------------------------------------------------------|-----|
| NTDB id 85 BSU 00860 NP 387967.1            | QDETQNHKDMKDKVMGELKRAFRPEFINRIDEIIVFHSLEKKHLTEIVSLMSDQLTKRLKEQDLSIELTDAAKAKVAEEG    | 755 |
| NTDB id 983608 NSQ11 RS06835 WP 058213826.1 | EQEEA...IEEQSLIDSLSAYFKPEFLNRFDSIIQFDSLDDLVKIVDLLLLKDLSEQLKEQNLTVHVVTNEAKEKIAELG    | 652 |
| NTDB id 601 KW2 RS02615 WP 021036805.1      | AREG....RTKSVLGLGDFFSPEFMNRFDGIIIEFSALSKEENLLKIVDMLLDEVNEQIGRNDIHLSTQAAKEKLVLDLG    | 684 |
| NTDB id 378 SMU RS02690 WP 002263569.1      | SREG....RTNSVLGELGNFFSPEFMNRFDGIIIEFQALSCKDNLLQIVSLMLDDVNQRLAVNAIHLDVDTKVKEKLVLDLG  | 691 |
| NTDB id 281 KZH43 RS03550 WP 000882517.1    | AREG....RTNSVLGELGNFFSPEFMNRFDGIIIEFKALSCKDNLLQIVELMLADVKNRKLSSNNIRLDVTDKVKEKLVLDLG | 690 |
| NTDB id 245 SPD RS03860 WP 000882517.1      | AREG....RTNSVLGELGNFFSPEFMNRFDGIIIEFKALSCKDNLLQIVELMLADVKNRKLSSNNIRLDVTDKVKEKLVLDLG | 690 |
| NTDB id 243 SPR RS03635 WP 000882517.1      | AREG....RTNSVLGELGNFFSPEFMNRFDGIIIEFKALSCKDNLLQIVELMLADVKNRKLSSNNIRLDVTDKVKEKLVLDLG | 690 |
| NTDB id 241 SP RS04015 WP 000882523.1       | AREG....RTNSVLGELGNFFSPEFMNRFDGIIIEFKALSCKDNLLQIVELMLADVKNRKLSSNNIRLDVTDKVKEKLVLDLG | 690 |
| NTDB id 610 V4T04 RS10165 WP 012897346.1    | KNITADYSAMKSRILEELKRHYRPEFLNRIDENIVFHSLESQETIEQIVKIMSLSLIKRLAEQDIHVKLTPSAVKLTAEVG   | 764 |
| NTDB id 287 SP RS11210 WP 001109712.1       | KDIRFDQENMEKRMFEELKKAYRPEFINRIDEKVVFHSLSDDHMQEVVKIMVKPLVASLTEKGIDLKLQASALKLLANQG    | 759 |
| NTDB id 290 KZH43 RS10025 WP 001109677.1    | KDIRFDQENMEKRMFEELKKAYRPEFINRIDEKVVFHSLSDDHMQEVVKIMVKPLVASLAEKGIDLKLQASALKLLANQG    | 759 |
| NTDB id 289 SPD RS10700 WP 001109677.1      | KDIRFDQENMEKRMFEELKKAYRPEFINRIDEKVVFHSLSDDHMQEVVKIMVKPLVASLAEKGIDLKLQASALKLLANQG    | 759 |
| NTDB id 377 SMU RS09275 WP 002262344.1      | KSFSQDYKAMESRILEELKKVYRPEFINRIDEKVVFHNLGQEDIRHIVKIMVAPLIAHLADQGITLKFQPSALKHLALAG    | 762 |
| NTDB id 297 STER RS00545 WP 011680614.1     | QTISHNHQAMQARIMEELKKSYPREFINRIDEKVVFHSLEEEQLHDIVKIMVKPLISALADKGISLKFQPAALKHLAKDG    | 765 |
| NTDB id 329 STU RS10020 WP 011225298.1      | QTISHNHQAMQARIMEELKKSYPREFINRIDEKVVFHSLEEEQLHDIVKIMVKPLISALADKGISLKFQPAALKHLAKDG    | 765 |
| consensus                                   | ** *! **!!!!!! ! * ! !* * * *! *** * * * * * * * * * * * * * * * !                  |     |

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non conserved  
 similar  
 ≥ 50% conserved