logo

```
NTDB id 601 KW2 RS02615 WP 021036805.1        .......................................MLCQNCNINEAT.................................I   13
NTDB id 378 SMU RS02690 WP 002263569.1        .......................................MLCQNCKLNEAT.................................I   13
NTDB id 85741 STYK RS04250 WP 261805303.1     .......................................MLCQNCKINDST.................................I   13
NTDB id 281 KZH43 RS03550 WP 000882517.1      .......................................MLCQNCKINDST.................................I   13
NTDB id 245 SPD RS03860 WP 000882517.1        .......................................MLCQNCKINDST.................................I   13
NTDB id 243 SPR RS03635 WP 000882517.1        .......................................MLCQNCKINDST.................................I   13
NTDB id 241 SP RS04015 WP 000882523.1         .......................................MLCQNCKINDST.................................I   13
NTDB id 85 BSU 00860 NP 387967.1              ..MMFGRFTERAQKVLALAQEEALRLGHNNIGTEHILLGLVREGEGIAAKALQALGLGSEKIQKEVESLIG........RGQEMS   75
NTDB id 610 V4T04 RS10165 WP 012897346.1      MKFENIKYTPTLDRILEKAEEYAHQYQYGTIESAHLLAAMATTSGSIAYSLLAGMNVDSSDLLIDL........EDLSSHVKVKR   77
NTDB id 287 SP RS11210 WP 001109712.1         .....MNYSKALNECIESAYMVAGHFGARYLESWHLLIAMSNHSYSVAGATLNDYPYEMDRLE.....EVALELTETDYSQDETF   75
NTDB id 290 KZH43 RS10025 WP 001109677.1      .....MNYSKALNECIESAYMVAGHFGARYLESWHLLIAMSNHSYSVAGATLNDYPYEMDRLE.....EVALELTETDYSQDETF   75
NTDB id 289 SPD RS10700 WP 001109677.1        .....MNYSKALNECIESAYMVAGHFGARYLESWHLLIAMSNHSYSVAGATLNDYPYEMDRLE.....EVALELTETDYSQDETF   75
NTDB id 377 SMU RS09275 WP 002262344.1        ....MTDYSLKMQEVFRLAQFEAARFESSYLESWHVLLAMVEIDSSVAGLSFAEFEADVRFEDYQAAAILAIGKKPKSSSN..DI   79
NTDB id 297 STER RS00545 WP 011680614.1       ....MTIYSRKMQAIFHRAQLEAERFESPFLETWHVLLAMVEVTGSVAYLTFTDFEDRIHSEEIETAAVLAMEKRPKDLSESDII   81
NTDB id 329 STU RS10020 WP 011225298.1        ....MTIYSRKMQAIFHRAQLEAERFESPFLETWHVLLAMVEVPGSVAYLTFTDFEDRIHSEEIETAAVLAMEKRPKDLSESDII   81
consensus                                                                            **     *   *                                 *
```

logo

```
NTDB id 601 KW2 RS02615 WP 021036805.1        HLYTSVNGQKKQIDLCQNCYQI...MKSGGQEALFGAGNASNGNSDE............PFNP.FNDIFSALQGQ.DFNGAASN.   80
NTDB id 378 SMU RS02690 WP 002263569.1        HLYANVNGQQKQIDLCQNCYQI...MKTDPENGPLNHLSQQNSSS...............INPFFDDFFGDLNNFRAFNNQDLP.   79
NTDB id 85741 STYK RS04250 WP 261805303.1     HLYTNLNGKQKQIDLCQNCYKI...IKTDPNNTLFKGITDLNNRD...............FDP.FGDFFNDLNNFRPSNN..TP.   76
NTDB id 281 KZH43 RS03550 WP 000882517.1      HLYTNLNGKQKQIDLCQNCYKI...IKTDPNNSLFKGMTDLNNRD...............FDP.FGDFFNDLNNFRPSSN..TP.   76
NTDB id 245 SPD RS03860 WP 000882517.1        HLYTNLNGKQKQIDLCQNCYKI...IKTDPNNSLFKGMTDLNNRD...............FDP.FGDFFNDLNNFRPSSN..TP.   76
NTDB id 243 SPR RS03635 WP 000882517.1        HLYTNLNGKQKQIDLCQNCYKI...IKTDPNNSLFKGMTDLNNRD...............FDP.FGDFFNDLNNFRPSSN..TP.   76
NTDB id 241 SP RS04015 WP 000882523.1         HLYTNLNGKQKQIDLCQNCYKI...IKTDPNNSLFKGMTDLNNRD...............FDP.FGDFFNDLNNFRPSSN..TP.   76
NTDB id 85 BSU 00860 NP 387967.1              QTIHYTPRAKKVIELSMDEARKLGHSYVGTEHILLGLIREGEGVAARVLNNLGVSLNKARQQVLQL.........LGSNET....  147
NTDB id 610 V4T04 RS10165 WP 012897346.1      STLRFSPRAEEVMTAASFLAIHNNSEAVGTEHLLYALLQVEDGFGLQLLKL.........QKINIVSLRKELEKRTGLKVPESKK  153
NTDB id 287 SP RS11210 WP 001109712.1         TELPFSRRLQVLFDEAEYVASVVHAKVLGTEHVLYAILHDSNALATRILERAGFSYEDKKDQVKIAALRRNLEERAGWTREDLKA  160
NTDB id 290 KZH43 RS10025 WP 001109677.1      TELPFSRRLQILFDEAEYVASVVHAKVLGTEHVLYAILHDGNALATRILERAGFSYEDKKDQVKIAALRRNLEERAGWTREDLKA  160
NTDB id 289 SPD RS10700 WP 001109677.1        TELPFSRRLQILFDEAEYVASVVHAKVLGTEHVLYAILHDGNALATRILERAGFSYEDKKDQVKIAALRRNLEERAGWTREDLKA  160
NTDB id 377 SMU RS09275 WP 002262344.1        MLLEQSHALKRTLAEAAAISQVTHAKEVGTEHVLFAMLLNPNLLATRILELVGFHAKDDGESIRLLDLRKVIERYAGFSKEDIKA  164
NTDB id 297 STER RS00545 WP 011680614.1       DLRAQSPALEAMLQEAQEIASVTGAVEVGSEHVLMAFLLHKDLMVCRLLEVAGFQYKDDSDKPRIIDLRRSLERNAGLSKQDLKA  166
NTDB id 329 STU RS10020 WP 011225298.1        DLRAQSPALEAMLQEAQGIASVTGAVEVGSEHVLMAFLLHKDLMVCRLLEVAGFQYKDDSDKPRIIDLRRSLERNAGLSKQDLKA  166
consensus                                      *  *  * ** **  *    *   *  * *  *** * * *                    *   *    *    * *
```

```
logo
NTDB id 601 KW2 RS02615 WP 021036805.1      ....QTPPTQTGGR.........GPRGP.QNPRAKQPKGMLEEFGINITESARRGEIDPVIGRDEEIKRVIEILNRRTKNNPVLI   151
NTDB id 378 SMU RS02690 WP 002263569.1      ....NTPPTQAGGGNGN.GGNNRRPGGPQ.QQASQKPNGLLEEFGINLTDIARKGEIDPVIGRDEEITRVIEILNRRTKNNPVLI   158
NTDB id 85741 STYK RS04250 WP 261805303.1   ....PTPPTQSGGGYGGNGGYGSQNRGPAQTPPPSQEKGLLEEFGINVTEIARRGDIDPVIGRDDEIIRVIEILNRRTKNNPVLI   157
NTDB id 281 KZH43 RS03550 WP 000882517.1    ....PIPPTQSGGGYGGNGGYGSQNRGSAQTPPPSQEKGLLEEFGINVTEIARRGDIDPVIGRDDEIIRVIEILNRRTKNNPVLI   157
NTDB id 245 SPD RS03860 WP 000882517.1      ....PIPPTQSGGGYGGNGGYGSQNRGSAQTPPPSQEKGLLEEFGINVTEIARRGDIDPVIGRDDEIIRVIEILNRRTKNNPVLI   157
NTDB id 243 SPR RS03635 WP 000882517.1      ....PIPPTQSGGGYGGNGGYGSQNRGSAQTPPPSQEKGLLEEFGINVTEIARRGDIDPVIGRDDEIIRVIEILNRRTKNNPVLI   157
NTDB id 241 SP RS04015 WP 000882523.1       ....PIPPTQSGGGYGGNGGYGSQNRGSAQTPPPSQEKGLLEEFGINVTEIARRGDIDPVIGRDDEIIRVIEILNRRTKNNPVLI   157
NTDB id 85 BSU 00860 NP 387967.1            ........................GSSAAGTNSNANTPTLDSLARDLTAIAKEDSLDPVIGRSKEIQRVIEVLSRRTKNNPVLI   207
NTDB id 610 V4T04 RS10165 WP 012897346.1    AVTPMSKRKMAKG...................VAENSTTPTLDSVSSDLTEEARLGKLDPMIGREAEIDRLIHILSRRTKNNPVLV   220
NTDB id 287 SP RS11210 WP 001109712.1       .LRQRHRTV.ADK..........QNSMANMMGMPQTPSGGLEDYTHDLTEQARSGKLEPVIGRDKEISRMIQILSRKTKNNPVLV   233
NTDB id 290 KZH43 RS10025 WP 001109677.1    .LRQRHRTV.ADK..........QNSMANMMGMPQTPSGGLEDYTHDLTEQARSGKLEPVIGRDKEISRMIQILSRKTKNNPVLV   233
NTDB id 289 SPD RS10700 WP 001109677.1      .LRQRHRTV.ADK..........QNSMANMMGMPQTPSGGLEDYTHDLTEQARSGKLEPVIGRDKEISRMIQILSRKTKNNPVLV   233
NTDB id 377 SMU RS09275 WP 002262344.1      .IFEMRKPKKVKN..........SSSFSDLMKPP.SVTGELADFTRDLTELARQGRLEPVIGREQEISRMVQILSRKTKNNPVLV   237
NTDB id 297 STER RS00545 WP 011680614.1     .IHDLRKPKKSKA..........SANFANMMQPPQSSTGELADYTKDLTALAESGNLDPVIGRDEEISRMIQVLSRKTKNNPVLV   240
NTDB id 329 STU RS10020 WP 011225298.1      .IHDLRKPKKSKA..........SANFANMMQPPQSSTGELADYTKDLTALAESGNLDPIIGRDEEISRMIQVLSRKTKNNPVLV   240
consensus                                          *    *                    *    * !***   *!**!* * **!*!!!**!! !** *! !*!!!!!!!*
```

```
logo
NTDB id 601 KW2 RS02615 WP 021036805.1      GEPGVGKTAVVEGLAQKIVDGDVPQKLQNKEVIRLDVVSLVQGTGIRGQFEERMQKLMDEIRKRNDVIMFIDEIHEIVGAGSAGD   236
NTDB id 378 SMU RS02690 WP 002263569.1      GEPGVGKTAVVEGLAQKIVDGDVPQKLHGKNVIRLDVVSLVQGTGIRGQFEERMQKLMEEIRQRQDVILFIDEIHEIVGAGSAGD   243
NTDB id 85741 STYK RS04250 WP 261805303.1   GEPGVGKTAVVEGLAQKIVDGDVPHKLQGKQVIRLDVVSLVQGTGIRGQFEERMQKLMEEIRKREDIILFIDEIHEIVGAGSAGD   242
NTDB id 281 KZH43 RS03550 WP 000882517.1    GEPGVGKTAVVEGLAQKIVDGDVPHKLQGKQVIRLDVVSLVQGTGIRGQFEERMQKLMEEIRKREDIILFIDEIHEIVGAGSASD   242
NTDB id 245 SPD RS03860 WP 000882517.1      GEPGVGKTAVVEGLAQKIVDGDVPHKLQGKQVIRLDVVSLVQGTGIRGQFEERMQKLMEEIRKREDIILFIDEIHEIVGAGSASD   242
NTDB id 243 SPR RS03635 WP 000882517.1      GEPGVGKTAVVEGLAQKIVDGDVPHKLQGKQVIRLDVVSLVQGTGIRGQFEERMQKLMEEIRKREDIILFIDEIHEIVGAGSASD   242
NTDB id 241 SP RS04015 WP 000882523.1       GEPGVGKTAVVEGLAQKIVDGDVPHKLQGKQVIRLDVVSLVQGTGIRGQFEERMQKLMEEIRKREDIILFIDEIHEIVGAGSASD   242
NTDB id 85 BSU 00860 NP 387967.1            GEPGVGKTAIAEGLAQQIINNEVPEILRDKRVMTLDMGTVVAGTKYRGEFEDRLKKVMDEIRQAGNIILFIDELHTLIGAGG.AE   291
NTDB id 610 V4T04 RS10165 WP 012897346.1    GEPGVGKSAIIEGLAQRIVNGQVPIGLMNSRIMALNMATVVAGTKFRGEFEDRLTAIVEEVSSDPDVIIFIDELHTIIGAGGGMD   305
NTDB id 287 SP RS11210 WP 001109712.1       GDAGVGKTALALGLAQRIASGDVPAEMAKMRVLELDLMNVVAGTRFRGDFEERMNNIIKDIEEDGQVILFIDELHTIMGSGSGID   318
NTDB id 290 KZH43 RS10025 WP 001109677.1    GDAGVGKTALALGLAQRIASGDVPAEMAKMRVLELDLMNVVAGTRFRGDFEERMNNIIKDIEEDGQVILFIDELHTIMGSGSGID   318
NTDB id 289 SPD RS10700 WP 001109677.1      GDAGVGKTALALGLAQRIASGDVPAEMAKMRVLELDLMNVVAGTRFRGDFEERMNNIIKDIEEDGQVILFIDELHTIMGSGSGID   318
NTDB id 377 SMU RS09275 WP 002262344.1      GDAGVGKTALAYGLAQRIVDSAVPFELADMKVLELDMMSVVAGTRFRGDFEERMNQIIADIEADGHIVLFIDELHTIMGSGSGID   322
NTDB id 297 STER RS00545 WP 011680614.1     GEAGVGKTALALGLAQRIASGEVPFELADMRILELDMMSVVAGTRFRGDFEERMNQIIDEIEADGKIILFIDELHTIIGSGSGID   325
NTDB id 329 STU RS10020 WP 011225298.1      GEAGVGKTALALGLAQRIASGEVPFELADMRILELDMMSVVAGTRFRGDFEERMNQIIDEIEADGKIILFIDELHTIIGSGSGID   325
consensus                                   !**!!!!*!* *!!!!*!* **!!  *    ** !*****! !!  !! !!*!** *****     ***!!!!*! **!*!** *
```

```
logo
NTDB id 601 KW2 RS02615 WP 021036805.1      GNMDAGNILKPALARGELQLVGATTLNEYR.IIEKDAALERRMQPVKVDEPSVDETITILRGIQARYEDYHHVKYTDEAIEAAAH   320
NTDB id 378 SMU RS02690 WP 002263569.1      GNMDAGNILKPALARGELQLVGATTLNEYR.IIEKDAALERRMQPVKVDEPSVAETITILKGIQPKYEDYHHVKYTDEAIEAAAN   327
NTDB id 85741 STYK RS04250 WP 261805303.1   GNMDAGNILKPALARGELQLVGATTLNEYR.IIEKDAALERRMQPVKVDEPTVEETITILKGIQKKYEDYHHVQYTDAAIEAAAT   326
NTDB id 281 KZH43 RS03550 WP 000882517.1    GNMDAGNILKPALARGELQLVGATTLNEYR.IIEKDAALERRMQPVKVDEPTVDETITILKGIQKKYEDYHHVQYTDAAIEAAAT   326
NTDB id 245 SPD RS03860 WP 000882517.1      GNMDAGNILKPALARGELQLVGATTLNEYR.IIEKDAALERRMQPVKVDEPTVDETITILKGIQKKYEDYHHVQYTDAAIEAAAT   326
NTDB id 243 SPR RS03635 WP 000882517.1      GNMDAGNILKPALARGELQLVGATTLNEYR.IIEKDAALERRMQPVKVDEPTVDETITILKGIQKKYEDYHHVQYTDAAIEAAAT   326
NTDB id 241 SP RS04015 WP 000882523.1       GNMDAGNILKPALARGELQLVGATTLNEYR.IIEKDAALERRMQPVKVDEPTVDETITILKGIQKKYEDYHHVQYTDAAIEAAAT   326
NTDB id 85 BSU 00860 NP 387967.1            GAIDASNILKPSLARGELQCIGATTLDEYRKYIEKDAALERRFQPIQVDQPSVDESIQILQGLRDRYEAHHRVSITDDAIEAAVK   376
NTDB id 610 V4T04 RS10165 WP 012897346.1    SVNDAANILKPALARGDFQMVGATTYHEYQKYIEKDEALERRLARINVDEPSPDEAIAILQGLREKFEDYHQVKFTDQAIKSAVM   390
NTDB id 287 SP RS11210 WP 001109712.1       STLDAANILKPALARGTLRTVGATTQEEYQKHIEKDAALSRRFAKVTIEEPSVADSMTILQGLKATYEKHHRVQITDEAVETAVK   403
NTDB id 290 KZH43 RS10025 WP 001109677.1    STLDAANILKPALARGTLRTVGATTQEEYQKHIEKDAALSRRFAKVTIEEPSVADSMTILQGLKATYEKHHRVQITDEAVETAVK   403
NTDB id 289 SPD RS10700 WP 001109677.1      STLDAANILKPALARGTLRTVGATTQEEYQKHIEKDAALSRRFAKVTIEEPSVADSMTILQGLKATYEKHHRVQITDEAVETAVK   403
NTDB id 377 SMU RS09275 WP 002262344.1      STLDAANILKPALARGSLRTIGATTQEEYQKHIEKDAALSRRFAKVTIEEPSEEEAYQILLGLKKSYETYHHVIISDAAVMAAVK   407
NTDB id 297 STER RS00545 WP 011680614.1     STLDAANILKPALARGTLHMVGATTQAEYQKHIEKDAALSRRFAKITIEEPSVSEAIDILNGLRSSYEDYHRVTITDAAVETAVK   410
NTDB id 329 STU RS10020 WP 011225298.1      STLDAANILKPALARGTLHMVGATTQAEYQKHIEKDAALSRRFAKITIEEPSVSEAIDILNGLRSSYEDYHRVTITDAAVETAVK   410
consensus                                     *!!*!!!!!*!!!!*****!!!!  !!   !!!!*!!*!!   * ***!*******!! !*  **!**! !  *! !***!
```

```
logo
NTDB id 601 KW2 RS02615 WP 021036805.1      LSNRYIQDRFLPDKAIDLLDESGSKKNLTLKF..VDPEDINRRIADAENKKNEATKAEDFEKAAHFRDQISKLRELQK......Q   397
NTDB id 378 SMU RS02690 WP 002263569.1      LSNRYIQDRFLPDKAIDLLDEAGSKMNLTLNF..VDPKEIDHRLIEAENLKAQATREDYEKAAYFRDQIAKYKEMQS......A   404
NTDB id 85741 STYK RS04250 WP 261805303.1   LSNRYIQDRFLPDKAIDLLDEAGSKMNLTLNF..VDPKVIDQRLIEAENLKSQATREEDFEKAAYFRDQIAKYKEMQK......K   403
NTDB id 281 KZH43 RS03550 WP 000882517.1    LSNRYIQDRFLPDKAIDLLDEAGSKMNLTLNF..VDPKVIDQRLIEAENLKSQATREEDFEKAAYFRDQIAKYKEMQK......K   403
NTDB id 245 SPD RS03860 WP 000882517.1      LSNRYIQDRFLPDKAIDLLDEAGSKMNLTLNF..VDPKVIDQRLIEAENLKSQATREEDFEKAAYFRDQIAKYKEMQK......K   403
NTDB id 243 SPR RS03635 WP 000882517.1      LSNRYIQDRFLPDKAIDLLDEAGSKMNLTLNF..VDPKVIDQRLIEAENLKSQATREEDFEKAAYFRDQIAKYKEMQK......K   403
NTDB id 241 SP RS04015 WP 000882523.1       LSNRYIQDRFLPDKAIDLLDEAGSKMNLTLNF..VDPKVIDQRLIEAENLKSQATREEDFEKAAYFRDQIAKYKEMQK......K   403
NTDB id 85 BSU 00860 NP 387967.1            LSDRYISDRFLPDKAIDLIDEAGSKVRLRSFTTPPNLKELEQKLDEVRKEKDAAVQSQEFEKAASLRDTEQRLREQVEDTKKSWK   461
NTDB id 610 V4T04 RS10165 WP 012897346.1    LSVRYMTSRKLPDKAIDLLDEAAAAVKISVKNQQTKRLDLEKELAEAQEELSEAVIKLDIKASRTKEKAVEKIADKIYKFS....   471
NTDB id 287 SP RS11210 WP 001109712.1       MAHRYLTSRHLPDSAIDLLDEAAATVQNKAKHVKADDSDL....S....PADKALMDGKWKQAAQLIAKEE.........E....   467
NTDB id 290 KZH43 RS10025 WP 001109677.1    MAHRYLTSRHLPDSAIDLLDEAAATVQNKAKHVKADDSDL....S....PADKALMDGKWKQAAQLIAKEE.........E....   467
NTDB id 289 SPD RS10700 WP 001109677.1      MAHRYLTSRHLPDSAIDLLDEAAATVQNKAKHVKADDSDL....S....PADKALMDGKWKQAAQLIAKEE.........E....   467
NTDB id 377 SMU RS09275 WP 002262344.1      GAHRYLSGKNLPDSAIDLLDEASATVQGLVKK..KAPAYL....T....DLDHALITNDYQLAKRLLKKEK.........K....   469
NTDB id 297 STER RS00545 WP 011680614.1     AAHRYLTSKNLPDSAIDLLDEASATVQVRIKK..EDKREI....T....PLDEALISGDIGAAVKQYKANQ.........K....   472
NTDB id 329 STU RS10020 WP 011225298.1      AAHRYLTSKNLPDSAIDLLDEASATVQVRIKK..EAKREI....T....PLDEALISGDIGAAVKQYKANQ.........K....   472
consensus                                   ** !!*  * !!!*!!!!*!!**  *** *     * ***   * *       !  * **  **       *  *
```

```
logo
NTDB id 601 KW2 RS02615 WP 021036805.1      EVTDEDMPVITEKDIEQIVEQKTQIPVGDLKEKEQTQLINLADDLKAHVIGQDEAVDKISKAIRRSRVGLGKPNRPIGSFLFVGP   482
NTDB id 378 SMU RS02690 WP 002263569.1      KLDKENTPVITEKNIEVIVEQKTNIPVGELKEKEQSQLIHLADDLKTRVIGQDAAVDKIAKAIRRNRVGLGTPNRPIGSFLFVGP   489
NTDB id 85741 STYK RS04250 WP 261805303.1   KVTDQDTPIISEKTIEHIIEQKTNIPVGDLKEKEQSQLIHLAEDLKSHVIGQDDAVDKIAKAIRRNRVGLGTPNRPIGSFLFVGP   488
NTDB id 281 KZH43 RS03550 WP 000882517.1    KITDQDTPIISEKTIEHIIEQKTNIPVGDLKEKEQSQLIHLAEDLKSHVIGQDDAVDKIAKAIRRNRVGLGTPNRPIGSFLFVGP   488
NTDB id 245 SPD RS03860 WP 000882517.1      KITDQDTPIISEKTIEHIIEQKTNIPVGDLKEKEQSQLIHLAEDLKSHVIGQDDAVDKIAKAIRRNRVGLGTPNRPIGSFLFVGP   488
NTDB id 243 SPR RS03635 WP 000882517.1      KITDQDTPIISEKTIEHIIEQKTNIPVGDLKEKEQSQLIHLAEDLKSHVIGQDDAVDKIAKAIRRNRVGLGTPNRPIGSFLFVGP   488
NTDB id 241 SP RS04015 WP 000882523.1       KITDQDTPSISEKTIEHIIEQKTNIPVGDLKEKEQSQLIHLAEDLKSHVIGQDDAVDKIAKAIRRNRVGLGTPNRPIGSFLFVGP   488
NTDB id 85 BSU 00860 NP 387967.1            EKQGQENSEVTVDDIAMVVSSWTGVPVSKIAQTETDKLLNMENILHSRVIGQDEAVVAVAKAVRRARAGLKDPKRPIGSFIFLGP   546
NTDB id 610 V4T04 RS10165 WP 012897346.1    .VKEDKRQEVTDQAVVAVASTLTGVPITQMTKSESDRLINLEKELHKRVVGQEEAISAVSRAIRRARSGVADSRRPMGSFMFLGP   555
NTDB id 287 SP RS11210 WP 001109712.1       .VPV.YKDLVTESDILTTLSRLSGIPVQKLTQTDAKKYLNLEAELHKRVIGQDQAVSSISRAIRRNQSGIRSHKRPIGSFMFLGP   550
NTDB id 290 KZH43 RS10025 WP 001109677.1    .VPV.YKDLVTESDILTTLSRLSGIPVQKLTQTDAKKYLNLEAELHKRVIGQDQAVSSISRAIRRNQSGIRSHKRPIGSFMFLGP   550
NTDB id 289 SPD RS10700 WP 001109677.1      .VPV.YKDLVTESDILTTLSRLSGIPVQKLTQTDAKKYLNLEAELHKRVIGQDQAVSSISRAIRRNQSGIRSHKRPIGSFMFLGP   550
NTDB id 377 SMU RS09275 WP 002262344.1      .PLLKKRAEVKEEDILATLSKLSGIPVKKLTQADSKKYLNLERELHKRVIGQDDAVSSISRAIRRNQSGIRVGKRPIGSFMFLGP   553
NTDB id 297 STER RS00545 WP 011680614.1     .AKFPKPALVDADQIMQTLSRLSGIPVEKMTQTDSKRYLNLESELHKRVIGQDEAVSAISRAIRRNQSGIRTGKRPIGSFMFLGP   556
NTDB id 329 STU RS10020 WP 011225298.1      .AKFPKPALVDADQIMQTLSRLSGIPVEKMTQTDSKRYLNLESELHKRVIGQDEAVSAISRAIRRNQSGIRTGKRPIGSFMFLGP   556
consensus                                    *      ****  *  **   * *!*  *   *   ****  *!  *!*!!**!*  * *!*!!** !* *  !!*!!!*!*!!
```

```
logo
NTDB id 601 KW2 RS02615 WP 021036805.1      TGVGKTELAKQLAKELFGSSESMIRFDMSEYMEKHSVAKLIGAPPGYVGYEEAGQLTERVRRNPYSLILLDEIEKAHPDVMHMFL   567
NTDB id 378 SMU RS02690 WP 002263569.1      TGVGKTELSKQLAIELFGSEDSMIRFDMSEYMEKHAVAKLVGAPPGYVGYEEAGQLTEKVRRNPYSLILLDEVEKAHPDVMHMFL   574
NTDB id 85741 STYK RS04250 WP 261805303.1   TGVGKTELSKQLAIELFGSADSMIRFDMSEYMEKHSVAKLVGAPPGYVGYDEAGQLTEKVRRNPYSLILLDEVEKAHPDVMHMFL   573
NTDB id 281 KZH43 RS03550 WP 000882517.1    TGVGKTELSKQLAIELFGSADSMIRFDMSEYMEKHSVAKLVGAPPGYVGYDEAGQLTEKVRHNPYSLILLDEVEKAHPDVMHMFL   573
NTDB id 245 SPD RS03860 WP 000882517.1      TGVGKTELSKQLAIELFGSADSMIRFDMSEYMEKHSVAKLVGAPPGYVGYDEAGQLTEKVRHNPYSLILLDEVEKAHPDVMHMFL   573
NTDB id 243 SPR RS03635 WP 000882517.1      TGVGKTELSKQLAIELFGSADSMIRFDMSEYMEKHSVAKLVGAPPGYVGYDEAGQLTEKVRHNPYSLILLDEVEKAHPDVMHMFL   573
NTDB id 241 SP RS04015 WP 000882523.1       TGVGKTELSKQLAIELFGSADSMIRFDMSEYMEKHSVAKLVGAPPGYVGYDEAGQLTEKVRHNPYSLILLDEVEKAHPDVMHMFL   573
NTDB id 85 BSU 00860 NP 387967.1            TGVGKTELARALAESIFGDEESMIRIDMSEYMEKHSTSRLVGSPPGYVGYDEGGQLTEKVRRKPYSVVLLDEIEKAHPDVFNILL   631
NTDB id 610 V4T04 RS10165 WP 012897346.1    TGVGKTELAKALADSVFGSEDNMIRVDMSEFMEKHSTSRLIGAPPGYVGYDEGGQLTERVRNKPYSVVLLDEVEKAHPDVFNIML   640
NTDB id 287 SP RS11210 WP 001109712.1       TGVGKTELAKALAEVLFDDESALIRFDMSEYMEKFAASRLNGAPPGYVGYEEGGELTEKVRNKPYSVLLFDEVEKAHPDIFNVLL   635
NTDB id 290 KZH43 RS10025 WP 001109677.1    TGVGKTELAKALAEVLFDDESALIRFDMSEYMEKFAASRLNGAPPGYVGYEEGGELTEKVRNKPYSVLLFDEVEKAHPDIFNVLL   635
NTDB id 289 SPD RS10700 WP 001109677.1      TGVGKTELAKALAEVLFDDESALIRFDMSEYMEKFAASRLNGAPPGYVGYEEGGELTEKVRNKPYSVLLFDEVEKAHPDIFNVLL   635
NTDB id 377 SMU RS09275 WP 002262344.1      TGVGKTELAKALAEVLFDDESALIRFDMSEYMEKFAASRLNGAPPGYVGYEEGGELTEKVRNKPYSVLLFDEVEKAHPDIFNILL   638
NTDB id 297 STER RS00545 WP 011680614.1     TGVGKTELAKALAEVLFDDESALLRFDMSEYMEKFAASRLNGAPPGYVGYDEGGELTEKVRNKPYSVLLFDEIEKAHPDIFNILL   641
NTDB id 329 STU RS10020 WP 011225298.1      TGVGKTELAKALAEVLFDDESALLRFDMSEYMEKFAASRLNGAPPGYVGYDEGGELTEKVRNKPYSVLLFDEIEKAHPDIFNVLL   641
consensus                                   !!!!!!!!** !!  *!* ** **!*!!!!*!!!*   *!*!*!!!!!!!*!*!*!!!*!!  !!!**!*!!*!!!!!!*  * !
```

```
logo
NTDB id 601 KW2 RS02615 WP 021036805.1      QILEDGRLTDAQGRTVSFKDSLIIMTSNAGTGK..VEASVGFGAAREG.....RTKSVLGQLGDFFSPEFMNRFDGIIEFSALSK   645
NTDB id 378 SMU RS02690 WP 002263569.1      QVLDDGRLTDGQGRTVSFKDTIIIMTSNAGTGK..SEANVGFGASREG.....RTNSVLGELGNFFSPEFMNRFDGIIEFQALSK   652
NTDB id 85741 STYK RS04250 WP 261805303.1   QVLDDGRLTDGQGRTVSFKDAIIIMTSNAGTGK..AEASVGFGAAREG.....RTNSVLGELGNFFSPEFMNRFDGIIEFKALSK   651
NTDB id 281 KZH43 RS03550 WP 000882517.1    QVLDDGRLTDGQGRTVSFKDAIIIMTSNAGTGK..TEASVGFGAAREG.....RTNSVLGELGNFFSPEFMNRFDGIIEFKALSK   651
NTDB id 245 SPD RS03860 WP 000882517.1      QVLDDGRLTDGQGRTVSFKDAIIIMTSNAGTGK..TEASVGFGAAREG.....RTNSVLGELGNFFSPEFMNRFDGIIEFKALSK   651
NTDB id 243 SPR RS03635 WP 000882517.1      QVLDDGRLTDGQGRTVSFKDAIIIMTSNAGTGK..TEASVGFGAAREG.....RTNSVLGELGNFFSPEFMNRFDGIIEFKALSK   651
NTDB id 241 SP RS04015 WP 000882523.1       QVLDDGRLTDGQGRTVSFKDAIIIMTSNAGTGK..TEASVGFGAAREG.....RTNSVLGELGNFFSPEFMNRFDGIIEFKALSK   651
NTDB id 85 BSU 00860 NP 387967.1            QVLEDGRLTDSKGRTVDFRNTILIMTSNVGASELKRNKYVGFNVQDETQNHKDMKDKVMGELKRAFRPEFINRIDEIIVFHSLEK   716
NTDB id 610 V4T04 RS10165 WP 012897346.1    QILDDGFVTDTKGRKVDFRNTIIIMTSNLGATALRDDKTVGFGAKNITADYSAMKSRILEELKRHYRPEFLNRIDENIVFHSLES   725
NTDB id 287 SP RS11210 WP 001109712.1       QVLDDGVLTDSKGRKVDFSNTIIIMTSNLGATALRDDKTVGFGAKDIRFDQENMEKRMFEELKKAYRPEFINRIDEKVVFHSLSS   720
NTDB id 290 KZH43 RS10025 WP 001109677.1    QVLDDGVLTDSKGRKVDFSNTIIIMTSNLGATALRDDKTVGFGAKDIRFDQENMEKRMFEELKKAYRPEFINRIDEKVVFHSLSS   720
NTDB id 289 SPD RS10700 WP 001109677.1      QVLDDGVLTDSKGRKVDFSNTIIIMTSNLGATALRDDKTVGFGAKDIRFDQENMEKRMFEELKKAYRPEFINRIDEKVVFHSLSS   720
NTDB id 377 SMU RS09275 WP 002262344.1      QVLDDGVLTDSRGRKVDFSNTIIIMTSNLGATALRDDKTVGFGAKSFSQDYKAMESRILEELKKVYRPEFINRIDEKVVFHNLGQ   723
NTDB id 297 STER RS00545 WP 011680614.1     QVLDDGVLTDSRGRKVDFSNTIIIMTSNLGATALRDDKTVGFGAQTISHNHQAMQARIMEELKKSYRPEFINRIDEKVVFHSLEE   726
NTDB id 329 STU RS10020 WP 011225298.1      QVLDDGVLTDSRGRKVDFSNTIIIMTSNLGATALRDDKTVGFGAQTISHNHQAMQARIMEELKKSYRPEFINRIDEKVVFHSLEE   726
consensus                                   !*!*!! *!!  !! ! !* ***!!!!! !      * *!!!**            ** *!   * !!!*!! !  * !  !*
```

```
logo
NTDB id 601 KW2 RS02615 WP 021036805.1      ENLLKIVDLMLDEVNEQIGRNDIHLSVTQAAKEKLVDLGYNPAMGARPLRRTIQENIEDSIADFYIEHPEYKQL.VADLIDDKIV   729
NTDB id 378 SMU RS02690 WP 002263569.1      DNLLQIVSLMLDDVNQRLAVNAIHLDVTDKVKEKLVDLGYDPKMGARPLRRTIQEHIEDAITDFYLEHPEQKEL.KAIMTSNGKI   736
NTDB id 85741 STYK RS04250 WP 261805303.1   DNLLQIVELMLADVNKRLSSNNIHLDVTDKVKEKLVDLGYDPKMGARPLRRTIQDYIEDAITDYYLENPIEKDL.KAVMTSKGNI   735
NTDB id 281 KZH43 RS03550 WP 000882517.1    DNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKLVDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKDL.KAVMTSKGNI   735
NTDB id 245 SPD RS03860 WP 000882517.1      DNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKLVDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKDL.KAVMTSKGNI   735
NTDB id 243 SPR RS03635 WP 000882517.1      DNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKLVDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKDL.KAVMTSKGNI   735
NTDB id 241 SP RS04015 WP 000882523.1       DNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKLVDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKDL.KAVMTSKGNI   735
NTDB id 85 BSU 00860 NP 387967.1            KHLTEIVSLMSDQLTKRLKEQDLSIELTDAAKAKVAEEGVDLEYGARPLRRAIQKHVEDRLSEELLRGNIHKGQHIVLDVEDGEF   801
NTDB id 610 V4T04 RS10165 WP 012897346.1    QEIEQIVKIMSKSLIKRLAEQDIHVKLTPSAVKLIAEVGFDPEYGARPLRKALQKEVEDLLSEQLLSGEIKAGNHVSIGASNKKI   810
NTDB id 287 SP RS11210 WP 001109712.1       DHMQEVVKIMVKPLVASLTEKGIDLKLQASALKLLANQGYDPEMGARPLRRTLQTEVEDKLAELLLKGDLVAGSTLKIGVKAGQL   805
NTDB id 290 KZH43 RS10025 WP 001109677.1    DHMQEVVKIMVKPLVASLAEKGIDLKLQASALKLLANQGYDPEMGARPLRRTLQTEVEDKLAELLLKGDLVAGSILKIGVKAGQL   805
NTDB id 289 SPD RS10700 WP 001109677.1      DHMQEVVKIMVKPLVASLAEKGIDLKLQASALKLLANQGYDPEMGARPLRRTLQTEVEDKLAELLLKGDLVAGSILKIGVKAGQL   805
NTDB id 377 SMU RS09275 WP 002262344.1      EDIRHIVKIMVAPLIAHLADQGITLKFQPSALKHLALAGYDAEMGARPLRRTLQTEVEDKLAELILSGKLASGQTLKIGIQKEKL   808
NTDB id 297 STER RS00545 WP 011680614.1     EQLHDIVKIMVKPLISALADKGISLKFQPAALKHLAKDGYDIEMGARPLRRTIQTQVEDKLSELLLGGQVVSGQTLKIGCSKDKL   811
NTDB id 329 STU RS10020 WP 011225298.1      EQLHDIVKIMVKPLISALADKGISLKFQPAALKHLAKDGYDIEMGARPLRRTIQTQVEDKLSELLLGGQVVSGQTLKIGCSKDKL   811
consensus                                   ***  *! *!*  *   *  * * * **  *   * * !*** *!!!!!!***!  *!! ***  *   *     * *  * * *
```

logo

NTDB id 601 KW2 RS02615 WP 021036805.1	.ISNQTQETAETTDEEVPAE	748
NTDB id 378 SMU RS02690 WP 002263569.1	VIKASNKVETVTKATSD...	753
NTDB id 85741 STYK RS04250 WP 261805303.1	QIKSAKKAEVKTSEKEV...	752
NTDB id 281 KZH43 RS03550 WP 000882517.1	QIKSAKKAEVKSSEKEK...	752
NTDB id 245 SPD RS03860 WP 000882517.1	QIKSAKKAEVKSSEKEK...	752
NTDB id 243 SPR RS03635 WP 000882517.1	QIKSAKKAEVKSSEKEK...	752
NTDB id 241 SP RS04015 WP 000882523.1	QIKSAKKAEVKSSEKEK...	752
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	*	

X non conserved
X similar
X $\geq$ 50% conserved