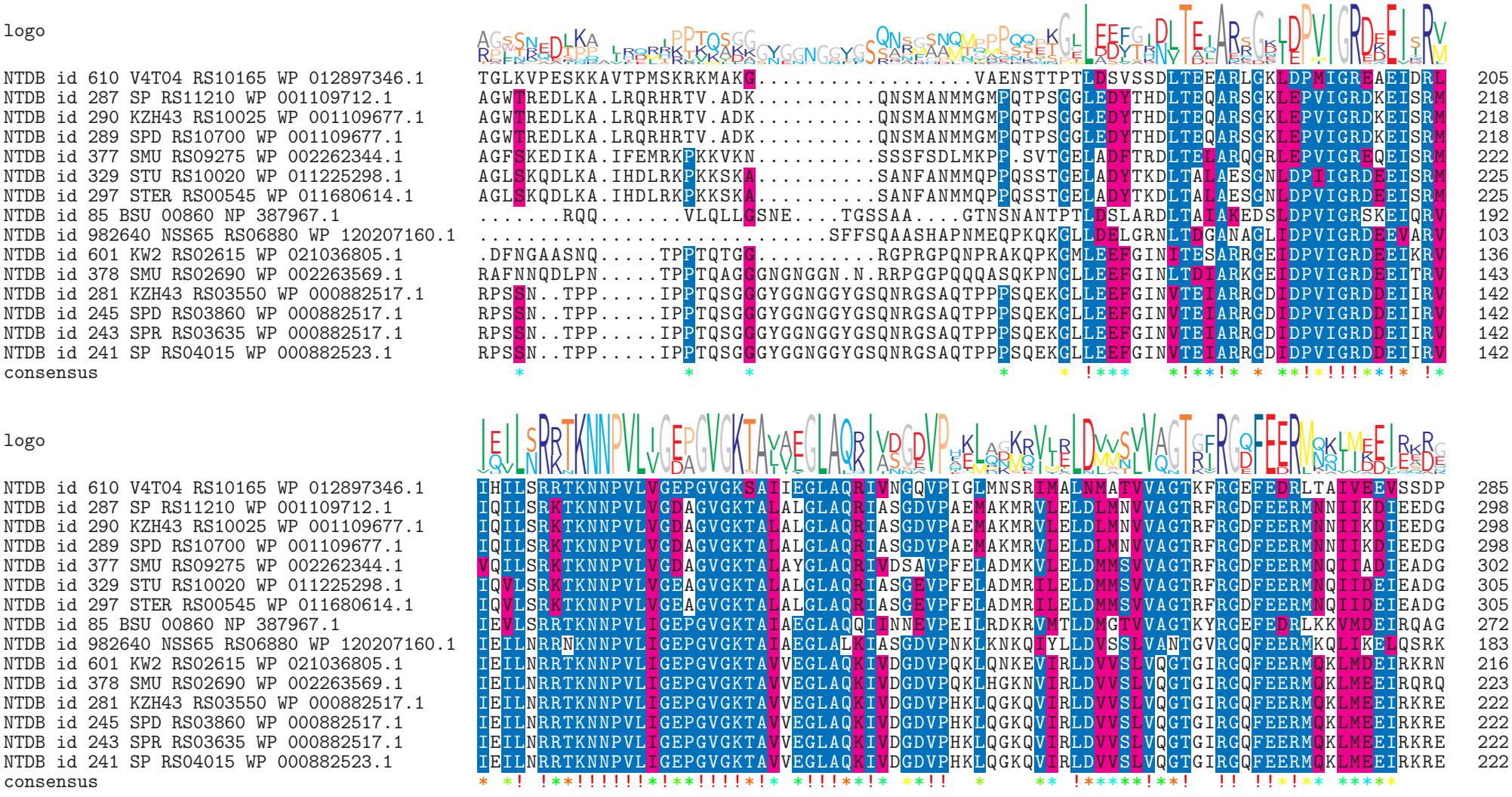
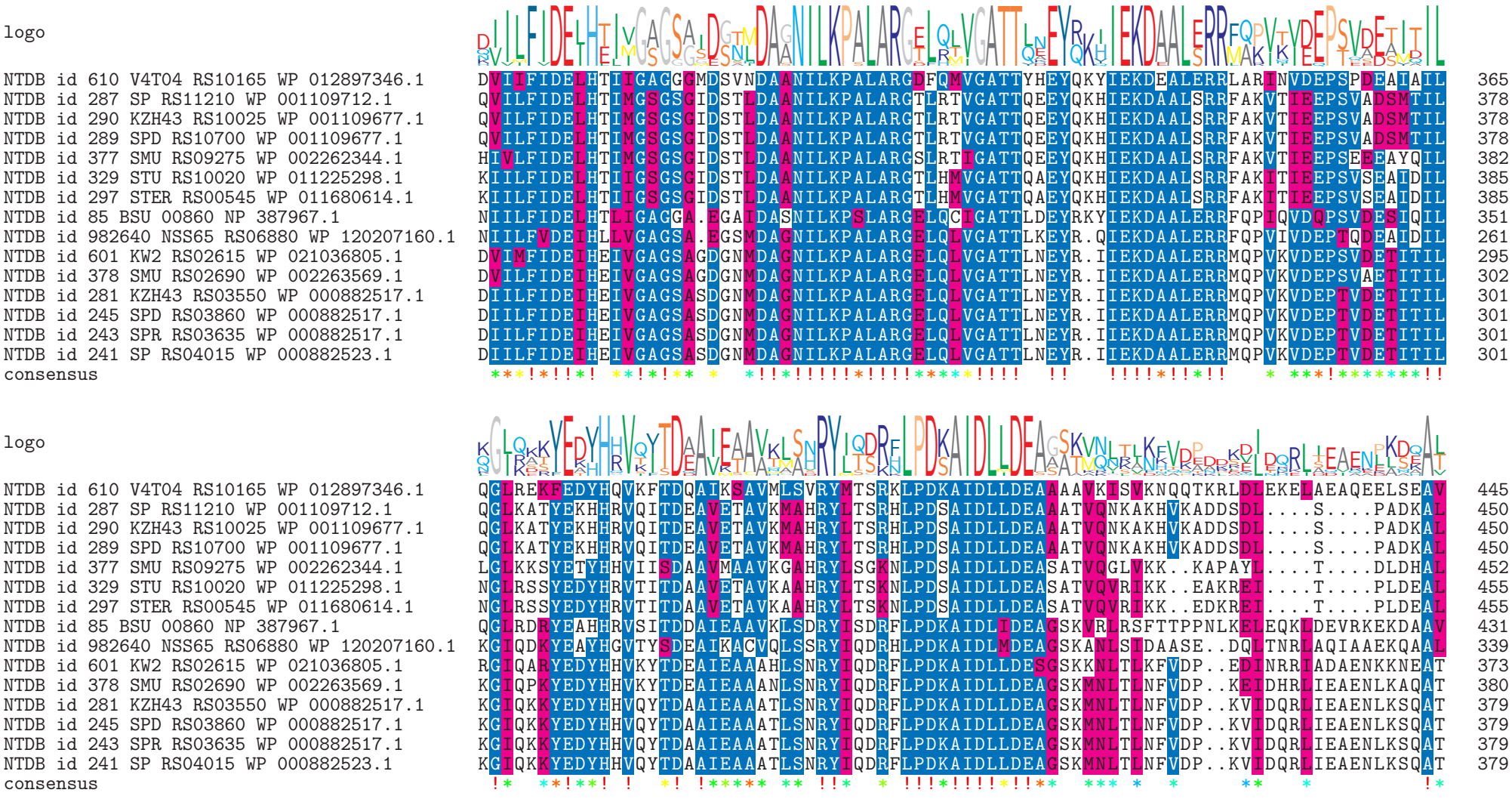
```
logo
```

```
NTDB id 610 V4T04 RS10165 WP 012897346.1     MKFENIKYTPTLDRILEKAEEYAHQYQYGTIESAHLLAAMATTSGSIAYSLLAGMNVDSSDLLIDL........EDLSSH    72
NTDB id 287 SP RS11210 WP 001109712.1        .....MNYSKALNECIESAYMVAGHFGARYLESWHLLIAMSNHSYSVAGATLNDYPYEMDRLE.....EVALELTETDYS    70
NTDB id 290 KZH43 RS10025 WP 001109677.1     .....MNYSKALNECIESAYMVAGHFGARYLESWHLLIAMSNHSYSVAGATLNDYPYEMDRLE.....EVALELTETDYS    70
NTDB id 289 SPD RS10700 WP 001109677.1       .....MNYSKALNECIESAYMVAGHFGARYLESWHLLIAMSNHSYSVAGATLNDYPYEMDRLE.....EVALELTETDYS    70
NTDB id 377 SMU RS09275 WP 002262344.1       ....MTDYSLKMQEVFRLAQFEAARFESSYLESWHVLLAMVEIDSSVAGLSFAEFEADVRFEDYQAAAILAIGKKPKSSS    76
NTDB id 329 STU RS10020 WP 011225298.1       ....MTIYSRKMQAIFHRAQLEAERFESPFLETWHVLLAMVEVPGSVAYLTFTDFEDRIHSEEIETAAVLAMEKRPKDLS    76
NTDB id 297 STER RS00545 WP 011680614.1      ....MTIYSRKMQAIFHRAQLEAERFESPFLETWHVLLAMVEVTGSVAYLTFTDFEDRIHSEEIETAAVLAMEKRPKDLS    76
NTDB id 85 BSU 00860 NP 387967.1            ..MMFGRFTERAQKVLALAQEEALRLGHNNIGTEHILLGLVREGEGIAAKALQALGLGSEKIQKEVESLI........GR    70
NTDB id 982640 NSS65 RS06880 WP 120207160.1 .......................MRCQHCQVNEATIRLNMQVN...................................S.    21
NTDB id 601 KW2 RS02615 WP 021036805.1      .......................MLCQNCNINEATIHLYTSVN...................................G.    21
NTDB id 378 SMU RS02690 WP 002263569.1      .......................MLCQNCKLNEATIHLYANVN...................................G.    21
NTDB id 281 KZH43 RS03550 WP 000882517.1    .......................MLCQNCKINDSTIHLYTNLN...................................G.    21
NTDB id 245 SPD RS03860 WP 000882517.1      .......................MLCQNCKINDSTIHLYTNLN...................................G.    21
NTDB id 243 SPR RS03635 WP 000882517.1      .......................MLCQNCKINDSTIHLYTNLN...................................G.    21
NTDB id 241 SP RS04015 WP 000882523.1       .......................MLCQNCKINDSTIHLYTNLN...................................G.    21
consensus                                                               *     * * *
```

```
logo
```

```
NTDB id 610 V4T04 RS10165 WP 012897346.1     VKVKRSTLRFSPRAEEVMTAASFLAIHNNSEAVGTEHLLYALLQVEDGFGLQLLKL.........QKINIVSLRKELEKR   143
NTDB id 287 SP RS11210 WP 001109712.1        QDETFTELPFSRRLQVLFDEAEYVASVVHAKVLGTEHVLYAILHDSNALATRILERAGFSYEDKKDQVKIAALRRNLEER   150
NTDB id 290 KZH43 RS10025 WP 001109677.1     QDETFTELPFSRRLQILFDEAEYVASVVHAKVLGTEHVLYAILHDGNALATRILERAGFSYEDKKDQVKIAALRRNLEER   150
NTDB id 289 SPD RS10700 WP 001109677.1       QDETFTELPFSRRLQILFDEAEYVASVVHAKVLGTEHVLYAILHDGNALATRILERAGFSYEDKKDQVKIAALRRNLEER   150
NTDB id 377 SMU RS09275 WP 002262344.1       N..DIMLLEQSHALKRTLAEAAAISQVTHAKEVGTEHVLFAMLLNPNLLATRILELVGFHAKDDGESIRLLDLRKVIERY   154
NTDB id 329 STU RS10020 WP 011225298.1       ESDIIDLRAQSPALEAMLQEAQGIASVTGAVEVGSEHVLMAFLLHKDLMVCRLLEVAGFQYKDDSDKPRIIDLRRSLERN   156
NTDB id 297 STER RS00545 WP 011680614.1      ESDIIDLRAQSPALEAMLQEAQEIASVTGAVEVGSEHVLMAFLLHKDLMVCRLLEVAGFQYKDDSDKPRIIDLRRSLERN   156
NTDB id 85 BSU 00860 NP 387967.1            GQEMSQTIHYTPRAKKVIELSMDEARKLGHSYVGTEHILLGLIREGEGVAA....RV............LNNLGVSLNKA   134
NTDB id 982640 NSS65 RS06880 WP 120207160.1 .............SRSQMVLCEDCYTSLM...EQSKMK...............MGP..............QLFGGS...    52
NTDB id 601 KW2 RS02615 WP 021036805.1      .............QKKQIDLCQNCYQIMK...SGGQEALFGAGNASNGNSDEPFNP............FNDIFSALQGQ    72
NTDB id 378 SMU RS02690 WP 002263569.1      .............QQKQIDLCQNCYQIMK...TDPENGPLNHLSQQNSSS...INPF...........FDDFFGDLNNF    70
NTDB id 281 KZH43 RS03550 WP 000882517.1    .............KQKQIDLCQNCYKIIK...TDPNNSLFKGMTDLNNRD...FDP............FGDFFNDLNNF    69
NTDB id 245 SPD RS03860 WP 000882517.1      .............KQKQIDLCQNCYKIIK...TDPNNSLFKGMTDLNNRD...FDP............FGDFFNDLNNF    69
NTDB id 243 SPR RS03635 WP 000882517.1      .............KQKQIDLCQNCYKIIK...TDPNNSLFKGMTDLNNRD...FDP............FGDFFNDLNNF    69
NTDB id 241 SP RS04015 WP 000882523.1       .............KQKQIDLCQNCYKIIK...TDPNNSLFKGMTDLNNRD...FDP............FGDFFNDLNNF    69
consensus                                                     **         **      ***   *** *    *       **                 **    *
```


logo
NTDB id 610 V4T04 RS10165 WP 012897346.1 TGLKVPESKKAVTPMSKRKMAKG.....VAENSTTPTLDSVSSDLTEEARLGKLDPMIGREAEIDRL 205
NTDB id 287 SP RS11210 WP 001109712.1 AGWTREDLKA.LRQRHRTV.ADK.....QNSMANMMGMPQTPSGGLEDYTHDLTEQARSGKLEPVIGRDKEISRM 218
NTDB id 290 KZH43 RS10025 WP 001109677.1 AGWTREDLKA.LRQRHRTV.ADK.....QNSMANMMGMPQTPSGGLEDYTHDLTEQARSGKLEPVIGRDKEISRM 218
NTDB id 289 SPD RS10700 WP 001109677.1 AGWTREDLKA.LRQRHRTV.ADK.....QNSMANMMGMPQTPSGGLEDYTHDLTEQARSGKLEPVIGRDKEISRM 218
NTDB id 377 SMU RS09275 WP 002262344.1 AGFSKEDIKA.IFEMRKPKKVKN.....SSSFSDLMKPP.SVTGELADFTRDLTELARQGRLEPVIGREQEISRM 222
NTDB id 329 STU RS10020 WP 011225298.1 AGLSKQDLKA.IHDLRKPKKSKA.....SANFANMMQPPQSSTGELADYTKDLTALAESGNLDPIIGRDEEISRM 225
NTDB id 297 STER RS00545 WP 011680614.1 AGLSKQDLKA.IHDLRKPKKSKA.....SANFANMMQPPQSSTGELADYTKDLTALAESGNLDPVIGRDEEISRM 225
NTDB id 85 BSU 00860 NP 387967.1 .....RQQ.....VLQLLGSNE....TGSSAA....GTNSNANTPTLDSLARDLTAIAKEDSLDPVIGRSKEIQRV 192
NTDB id 982640 NSS65 RS06880 WP 120207160.1 .....SFFSQAASHAPNMEQPKQKGLLDFLGRNLTDGANAGLIDPVIGRDEEVARV 103
NTDB id 601 KW2 RS02615 WP 021036805.1 .DFNGAASNQ.....TPPTQTGG.....RGPRGPQNPRAKQPKGMLEEFGINITESARRGEIDPVIGRDEEIKRV 136
NTDB id 378 SMU RS02690 WP 002263569.1 RAFNNQDLPN.....TPPTQAGGGNGNGGN.N.RRPGGPQQQASQKPNGLLEEFGINLTDIARKGEIDPVIGRDEEITRV 143
NTDB id 281 KZH43 RS03550 WP 000882517.1 RPSSN..TPP.....IPPTQSGGGYGGNGGYGSQNRGSAQTPPPSQEKGLLEEFGINVTEIARRGDIDPVIGRDDEIIRV 142
NTDB id 245 SPD RS03860 WP 000882517.1 RPSSN..TPP.....IPPTQSGGGYGGNGGYGSQNRGSAQTPPPSQEKGLLEEFGINVTEIARRGDIDPVIGRDDEIIRV 142
NTDB id 243 SPR RS03635 WP 000882517.1 RPSSN..TPP.....IPPTQSGGGYGGNGGYGSQNRGSAQTPPPSQEKGLLEEFGINVTEIARRGDIDPVIGRDDEIIRV 142
NTDB id 241 SP RS04015 WP 000882523.1 RPSSN..TPP.....IPPTQSGGGYGGNGGYGSQNRGSAQTPPPSQEKGLLEEFGINVTEIARRGDIDPVIGRDDEIIRV 142
consensus
logo
NTDB id 610 V4T04 RS10165 WP 012897346.1 IHILSRRTKNNPVLVGEPGVGKSAIIEGLAQRIVNGQVPIGLMNSRIMALNMATVVAGTKFRGEFEDRLTAIVEEVSSDP 285
NTDB id 287 SP RS11210 WP 001109712.1 IQILSRKTKNNPVLVGDAGVGKTALALGLAQRIASGDVPAEMAKMRVLELDLMNVVAGTRFRGDFEERMNNIIKDIEEDG 298
NTDB id 290 KZH43 RS10025 WP 001109677.1 IQILSRKTKNNPVLVGDAGVGKTALALGLAQRIASGDVPAEMAKMRVLELDLMNVVAGTRFRGDFEERMNNIIKDIEEDG 298
NTDB id 289 SPD RS10700 WP 001109677.1 IQILSRKTKNNPVLVGDAGVGKTALALGLAQRIASGDVPAEMAKMRVLELDLMNVVAGTRFRGDFEERMNNIIKDIEEDG 298
NTDB id 377 SMU RS09275 WP 002262344.1 VQILSRKTKNNPVLVGDAGVGKTALAYGLAQRIVDSAVPFELADMKVLELDMMSVVAGTRFRGDFEERMNQIIADIEADG 302
NTDB id 329 STU RS10020 WP 011225298.1 IQVLSRKTKNNPVLVGEAGVGKTALALGLAQRIASGEVPFELADMRILELDMMSVVAGTRFRGDFEERMNQIIDEIEADG 305
NTDB id 297 STER RS00545 WP 011680614.1 IQVLSRKTKNNPVLVGEAGVGKTALALGLAQRIASGEVPFELADMRILELDMMSVVAGTRFRGDFEERMNQIIDEIEADG 305
NTDB id 85 BSU 00860 NP 387967.1 IEVLSRRTKNNPVLIGEPGVGKTAIAEGLAQQIINNEVPEILRDKRVMTLDMGTVVAGTKYRGEFEDRLKKVMDEIRQAG 272
NTDB id 982640 NSS65 RS06880 WP 120207160.1 IEILNRRNKNNPVLIGEPGVGKTAIAEGLALKIASGDVPNKLKNKQIYLLDVSSLVANTGVRGQFEERMKQLIKELQSRK 183
NTDB id 601 KW2 RS02615 WP 021036805.1 IEILNRRTKNNPVLIGEPGVGKTAVVEGLAQKIVDGDVPQKLQNKEVIRLDVVSLVQGTGIRGQFEERMQKLMDEIRKRN 216
NTDB id 378 SMU RS02690 WP 002263569.1 IEILNRRTKNNPVLIGEPGVGKTAVVEGLAQKIVDGDVPQKLHGKNVIRLDVVSLVQGTGIRGQFEERMQKLMEEIRQRQ 223
NTDB id 281 KZH43 RS03550 WP 000882517.1 IEILNRRTKNNPVLIGEPGVGKTAVVEGLAQKIVDGDVPHKLQGKQVIRLDVVSLVQGTGIRGQFEERMQKLMEEIRKRE 222
NTDB id 245 SPD RS03860 WP 000882517.1 IEILNRRTKNNPVLIGEPGVGKTAVVEGLAQKIVDGDVPHKLQGKQVIRLDVVSLVQGTGIRGQFEERMQKLMEEIRKRE 222
NTDB id 243 SPR RS03635 WP 000882517.1 IEILNRRTKNNPVLIGEPGVGKTAVVEGLAQKIVDGDVPHKLQGKQVIRLDVVSLVQGTGIRGQFEERMQKLMEEIRKRE 222
NTDB id 241 SP RS04015 WP 000882523.1 IEILNRRTKNNPVLIGEPGVGKTAVVEGLAQKIVDGDVPHKLQGKQVIRLDVVSLVQGTGIRGQFEERMQKLMEEIRKRE 222
consensus


logo
NTDB id 610 V4T04 RS10165 WP 012897346.1 DVIIFIDELHTIIGAGGGMDSVNDAANILKPALARGDFQMVGATTYHEYQKYIEKDEALERRLARINVDEPSPDEAIAIL 365
NTDB id 287 SP RS11210 WP 001109712.1 QVILFIDELHTIMGSGSGIDSTLDAANILKPALARGTLRTVGATTQEEYQKHIEKDAALSRRFAKVTIEEPSVADSMTIL 378
NTDB id 290 KZH43 RS10025 WP 001109677.1 QVILFIDELHTIMGSGSGIDSTLDAANILKPALARGTLRTVGATTQEEYQKHIEKDAALSRRFAKVTIEEPSVADSMTIL 378
NTDB id 289 SPD RS10700 WP 001109677.1 QVILFIDELHTIMGSGSGIDSTLDAANILKPALARGTLRTVGATTQEEYQKHIEKDAALSRRFAKVTIEEPSVADSMTIL 378
NTDB id 377 SMU RS09275 WP 002262344.1 HIVLFIDELHTIMGSGSGIDSTLDAANILKPALARGSLRTIGATTQEEYQKHIEKDAALSRRFAKVTIEEPSEEEAYQIL 382
NTDB id 329 STU RS10020 WP 011225298.1 KIILFIDELHTIIGSGSGIDSTLDAANILKPALARGTLHMVGATTQAEYQKHIEKDAALSRRFAKITIEEPSVSEAIDIL 385
NTDB id 297 STER RS00545 WP 011680614.1 KIILFIDELHTIIGSGSGIDSTLDAANILKPALARGTLHMVGATTQAEYQKHIEKDAALSRRFAKITIEEPSVSEAIDIL 385
NTDB id 85 BSU 00860 NP 387967.1 NIILFIDELHTLIGAGGA.EGAIDASNILKPSLARGELQCIGATTLDEYRKYIEKDAALERRFQPIQVDQPSVDESIQIL 351
NTDB id 982640 NSS65 RS06880 WP 120207160.1 NIILFVDEIHLLVGAGSA.EGSMDAGNILKPALARGELQLVGATTLKEYR.QIEKDAALERRFQPVIVDEPTQDEAIDIL 261
NTDB id 601 KW2 RS02615 WP 021036805.1 DVIMFIDEIHEIVGAGSAGDGNMDAGNILKPALARGELQLVGATTLNEYR.IIEKDAALERRMQPVKVDEPSVDETITIL 295
NTDB id 378 SMU RS02690 WP 002263569.1 DVILFIDEIHEIVGAGSAGDGNMDAGNILKPALARGELQLVGATTLNEYR.IIEKDAALERRMQPVKVDEPSVAETITIL 302
NTDB id 281 KZH43 RS03550 WP 000882517.1 DIILFIDEIHEIVGAGSASDGNMDAGNILKPALARGELQLVGATTLNEYR.IIEKDAALERRMQPVKVDEPTVDETITIL 301
NTDB id 245 SPD RS03860 WP 000882517.1 DIILFIDEIHEIVGAGSASDGNMDAGNILKPALARGELQLVGATTLNEYR.IIEKDAALERRMQPVKVDEPTVDETITIL 301
NTDB id 243 SPR RS03635 WP 000882517.1 DIILFIDEIHEIVGAGSASDGNMDAGNILKPALARGELQLVGATTLNEYR.IIEKDAALERRMQPVKVDEPTVDETITIL 301
NTDB id 241 SP RS04015 WP 000882523.1 DIILFIDEIHEIVGAGSASDGNMDAGNILKPALARGELQLVGATTLNEYR.IIEKDAALERRMQPVKVDEPTVDETITIL 301
consensus
logo
NTDB id 610 V4T04 RS10165 WP 012897346.1 QGLREKFEDYHQVKFTDQAIKSAVMLSVRYMTSRKLPDKAIDLLDEAAAAVKISVKNQQTKRLDIEKELAEAQEELSEAV 445
NTDB id 287 SP RS11210 WP 001109712.1 QGLKATYEKHHRVQITDEAVETAVKMAHRYLTSRHLPDSAIDLLDEAAATVQNKAKHVKADDSDL....S....PADKAL 450
NTDB id 290 KZH43 RS10025 WP 001109677.1 QGLKATYEKHHRVQITDEAVETAVKMAHRYLTSRHLPDSAIDLLDEAAATVQNKAKHVKADDSDL....S....PADKAL 450
NTDB id 289 SPD RS10700 WP 001109677.1 QGLKATYEKHHRVQITDEAVETAVKMAHRYLTSRHLPDSAIDLLDEAAATVQNKAKHVKADDSDL....S....PADKAL 450
NTDB id 377 SMU RS09275 WP 002262344.1 LGLKKSYETYHHVIISDAAVMAAVKGAHRYLSGKNLPDSAIDLLDEASATVQGLVKK..KAPAYL....T....DLDHAL 452
NTDB id 329 STU RS10020 WP 011225298.1 NGLRSSYEDYHRVTITDAAVETAVKAAHRYLTSKNLPDSAIDLLDEASATVQVRIKK..EAKREI....T....PLDEAL 455
NTDB id 297 STER RS00545 WP 011680614.1 NGLRSSYEDYHRVTITDAAVETAVKAAHRYLTSKNLPDSAIDLLDEASATVQVRIKK..EDKREI....T....PLDEAL 455
NTDB id 85 BSU 00860 NP 387967.1 QGLRDRYEAHHRVSITDDAIEAAVKLSDRYISDRFLPDKAIDLIDEAGSKVRLRSFTTPPNLKELEQKLDEVRKEKDAAV 431
NTDB id 982640 NSS65 RS06880 WP 120207160.1 KGIQDKYEAYHGVTYSDEAIKACVQLSSRYIQDRHLPDKAIDLMDEAGSKANLSIDAASE..DQLTNRLAQIAAEKQAAL 339
NTDB id 601 KW2 RS02615 WP 021036805.1 RGIQARYEDYHHVKYTDEAIEAAAHLSNRYIQDRFLPDKAIDLLDESGSKKNLTLKFVDP..EDINRRIADAENKKNEAT 373
NTDB id 378 SMU RS02690 WP 002263569.1 KGIQPKYEDYHHVKYTDEAIEAAANLSNRYIQDRFLPDKAIDLLDEAGSKMNLTLNFVDP..KEIDHRLIEAENLKAQAT 380
NTDB id 281 KZH43 RS03550 WP 000882517.1 KGIQKKYEDYHHVQYTDAAIEAAATLSNRYIQDRFLPDKAIDLLDEAGSKMNLTLNFVDP..KVIDQRLIEAENLKSQAT 379
NTDB id 245 SPD RS03860 WP 000882517.1 KGIQKKYEDYHHVQYTDAAIEAAATLSNRYIQDRFLPDKAIDLLDEAGSKMNLTLNFVDP..KVIDQRLIEAENLKSQAT 379
NTDB id 243 SPR RS03635 WP 000882517.1 KGIQKKYEDYHHVQYTDAAIEAAATLSNRYIQDRFLPDKAIDLLDEAGSKMNLTLNFVDP..KVIDQRLIEAENLKSQAT 379
NTDB id 241 SP RS04015 WP 000882523.1 KGIQKKYEDYHHVQYTDAAIEAAATLSNRYIQDRFLPDKAIDLLDEAGSKMNLTLNFVDP..KVIDQRLIEAENLKSQAT 379
consensus

```
NTDB id 610 V4T04 RS10165 WP 012897346.1     IKLDIKASRTKEKAVEKIADKIYKF.....SVKEDKRQEVTDQAVVAVASTLTGVPITQMTKSESDRLINLEKELHKRVV  520
NTDB id 287 SP RS11210 WP 001109712.1        MDGKWKQAAQLIAKEE..............EVP.VYKDLVTESDILTTLSRLSGIPVQKLTQTDAKKYLNLEAELHKRVI  515
NTDB id 290 KZH43 RS10025 WP 001109677.1     MDGKWKQAAQLIAKEE..............EVP.VYKDLVTESDILTTLSRLSGIPVQKLTQTDAKKYLNLEAELHKRVI  515
NTDB id 289 SPD RS10700 WP 001109677.1       MDGKWKQAAQLIAKEE..............EVP.VYKDLVTESDILTTLSRLSGIPVQKLTQTDAKKYLNLEAELHKRVI  515
NTDB id 377 SMU RS09275 WP 002262344.1       ITNDYQLAKRLLKKEK..............KPLLKKRAEVKEEDILATLSKLSGIPVKKLTQADSKKYLNLERELHKRVI  518
NTDB id 329 STU RS10020 WP 011225298.1       ISGDIGAAVKQYKANQ..............KAKFPKPALVDADQIMQTLSRLSGIPVEKMTQTDSKRYLNLESELHKRVI  521
NTDB id 297 STER RS00545 WP 011680614.1      ISGDIGAAVKQYKANQ..............KAKFPKPALVDADQIMQTLSRLSGIPVEKMTQTDSKRYLNLESELHKRVI  521
NTDB id 85 BSU 00860 NP 387967.1             QSQEFEKAASLRDTEQRLREQVEDTKKSWKEKQGQENSEVTVDDIAMVVSSWTGVPVSKIAQTETDKLLNMENILHSRVI  511
NTDB id 982640 NSS65 RS06880 WP 120207160.1  KEEQYEKAAKLRDEEEAIEARL.QN......KTTEKEHIVTAEDIQAIVEQKTGIPVGKLQADEQTKMKEIDVRLKARVI  412
NTDB id 601 KW2 RS02615 WP 021036805.1       KAEDFEKAAHFRDQISKLRELQKQE......VTDEDMPVITEKDIEQIVEQKTQIPVGDLKEKEQTQLINLADDLKAHVI  447
NTDB id 378 SMU RS02690 WP 002263569.1       RDEDYEKAAYFRDQIAKYKEMQSAK......LDKENTPVITEKNIEVIVEQKTNIPVGELKEKEQSQLIHLADDLKTRVI  454
NTDB id 281 KZH43 RS03550 WP 000882517.1     REEDFEKAAYFRDQIAKYKEMQKKK......ITDQDTPIISEKTIEHIIEQKTNIPVGDLKEKEQSQLIHLAEDLKSHVI  453
NTDB id 245 SPD RS03860 WP 000882517.1       REEDFEKAAYFRDQIAKYKEMQKKK......ITDQDTPIISEKTIEHIIEQKTNIPVGDLKEKEQSQLIHLAEDLKSHVI  453
NTDB id 243 SPR RS03635 WP 000882517.1       REEDFEKAAYFRDQIAKYKEMQKKK......ITDQDTPIISEKTIEHIIEQKTNIPVGDLKEKEQSQLIHLAEDLKSHVI  453
NTDB id 241 SP RS04015 WP 000882523.1        REEDFEKAAYFRDQIAKYKEMQKKK......ITDQDTPSISEKTIEHIIEQKTNIPVGDLKEKEQSQLIHLAEDLKSHVI  453
consensus                                     * **  **                 *      ****  *  **   ***!*  *   *  ******* *!  *!*
```

```
NTDB id 610 V4T04 RS10165 WP 012897346.1     GQEEAISAVSRAIRRARSGVADSRRPMGSFMFLGPTGVGKTELAKALADSVFGSEDNMIRVDMSEFMEKHSTSRLIGAPP  600
NTDB id 287 SP RS11210 WP 001109712.1        GQDQAVSSISRAIRRNQSGIRSHKRPIGSFMFLGPTGVGKTELAKALAEVLFDDESALIRFDMSEYMEKFAASRLNGAPP  595
NTDB id 290 KZH43 RS10025 WP 001109677.1     GQDQAVSSISRAIRRNQSGIRSHKRPIGSFMFLGPTGVGKTELAKALAEVLFDDESALIRFDMSEYMEKFAASRLNGAPP  595
NTDB id 289 SPD RS10700 WP 001109677.1       GQDQAVSSISRAIRRNQSGIRSHKRPIGSFMFLGPTGVGKTELAKALAEVLFDDESALIRFDMSEYMEKFAASRLNGAPP  595
NTDB id 377 SMU RS09275 WP 002262344.1       GQDDAVSSISRAIRRNQSGIRVGKRPIGSFMFLGPTGVGKTELAKALAEVLFDDESALIRFDMSEYMEKFAASRLNGAPP  598
NTDB id 329 STU RS10020 WP 011225298.1       GQDEAVSAISRAIRRNQSGIRTGKRPIGSFMFLGPTGVGKTELAKALAEVLFDDESALLRFDMSEYMEKFAASRLNGAPP  601
NTDB id 297 STER RS00545 WP 011680614.1      GQDEAVSAISRAIRRNQSGIRTGKRPIGSFMFLGPTGVGKTELAKALAEVLFDDESALLRFDMSEYMEKFAASRLNGAPP  601
NTDB id 85 BSU 00860 NP 387967.1             GQDEAVVAVAKAVRRARAGLKDPKRPIGSFIFLGPTGVGKTELARALAESIFGDEESMIRIDMSEYMEKHSTSRLVGSPP  591
NTDB id 982640 NSS65 RS06880 WP 120207160.1  GQEHAVDKVAKAVKRSRAGLKSKHRPTGSFLFVGPTGVGKTELSKTLAEELFGSRDAIIRLDMSEYMEKHSVSKLIGSPP  492
NTDB id 601 KW2 RS02615 WP 021036805.1       GQDEAVDKISKAIRRSRVGLGKPNRPIGSFLFVGPTGVGKTELAKQLAKELFGSSESMIRFDMSEYMEKHSVAKLIGAPP  527
NTDB id 378 SMU RS02690 WP 002263569.1       GQDAAVDKIAKAIRRNRVGLGTPNRPIGSFLFVGPTGVGKTELSKQLAIELFGSEDSMIRFDMSEYMEKHAVAKLVGAPP  534
NTDB id 281 KZH43 RS03550 WP 000882517.1     GQDDAVDKIAKAIRRNRVGLGTPNRPIGSFLFVGPTGVGKTELSKQLAIELFGSADSMIRFDMSEYMEKHSVAKLVGAPP  533
NTDB id 245 SPD RS03860 WP 000882517.1       GQDDAVDKIAKAIRRNRVGLGTPNRPIGSFLFVGPTGVGKTELSKQLAIELFGSADSMIRFDMSEYMEKHSVAKLVGAPP  533
NTDB id 243 SPR RS03635 WP 000882517.1       GQDDAVDKIAKAIRRNRVGLGTPNRPIGSFLFVGPTGVGKTELSKQLAIELFGSADSMIRFDMSEYMEKHSVAKLVGAPP  533
NTDB id 241 SP RS04015 WP 000882523.1        GQDDAVDKIAKAIRRNRVGLGTPNRPIGSFLFVGPTGVGKTELSKQLAIELFGSADSMIRFDMSEYMEKHSVAKLVGAPP  533
consensus                                    !!**!*  * *!**!** !* *  !!*!!!*!*!!!!!!!!!!!** !!* *!* ** **!*!!!!*!!!*  **!*!*!!
```

logo

```
NTDB id 610 V4T04 RS10165 WP 012897346.1     GYVGYDEGGQLTERVRNKPYSVVLLDEVEKAHPDVFNIMLQILDDGFVTDTKGRKVDFRNTIIIMTSNLGATALRDDKTV  680
NTDB id 287 SP RS11210 WP 001109712.1        GYVGYEEGGELTEKVRNKPYSVLLFDEVEKAHPDIFNVLLQVLDDGVLTDSKGRKVDFSNTIIIMTSNLGATALRDDKTV  675
NTDB id 290 KZH43 RS10025 WP 001109677.1     GYVGYEEGGELTEKVRNKPYSVLLFDEVEKAHPDIFNVLLQVLDDGVLTDSKGRKVDFSNTIIIMTSNLGATALRDDKTV  675
NTDB id 289 SPD RS10700 WP 001109677.1       GYVGYEEGGELTEKVRNKPYSVLLFDEVEKAHPDIFNVLLQVLDDGVLTDSKGRKVDFSNTIIIMTSNLGATALRDDKTV  675
NTDB id 377 SMU RS09275 WP 002262344.1       GYVGYEEGGELTEKVRNKPYSVLLFDEVEKAHPDIFNILLQVLDDGVLTDSRGRKVDFSNTIIIMTSNLGATALRDDKTV  678
NTDB id 329 STU RS10020 WP 011225298.1       GYVGYDEGGELTEKVRNKPYSVLLFDEIEKAHPDIFNVLLQVLDDGVLTDSRGRKVDFSNTIIIMTSNLGATALRDDKTV  681
NTDB id 297 STER RS00545 WP 011680614.1      GYVGYDEGGELTEKVRNKPYSVLLFDEIEKAHPDIFNILLQVLDDGVLTDSRGRKVDFSNTIIIMTSNLGATALRDDKTV  681
NTDB id 85 BSU 00860 NP 387967.1             GYVGYDEGGQLTEKVRRKPYSVVLLDEIEKAHPDVFNILLQVLEDGRLTDSKGRTVDFRNTILIMTSNVGASELKRNKYV  671
NTDB id 982640 NSS65 RS06880 WP 120207160.1  GYVGHDEAGQLTEKVRRKPYSIILLDEIEKAHPDVQHMFLQIMEDGRLTDSQGRTVSFKDTVIIMTSNAGSADKT..VKV  570
NTDB id 601 KW2 RS02615 WP 021036805.1       GYVGYEEAGQLTERVRRNPYSLILLDEIEKAHPDVMHMFLQILEDGRLTDAQGRTVSFKDSLIIMTSNAGTGKVE..ASV  605
NTDB id 378 SMU RS02690 WP 002263569.1       GYVGYEEAGQLTEKVRRNPYSLILLDEVEKAHPDVMHMFLQVLDDGRLTDGQGRTVSFKDTIIIMTSNAGTGKSE..ANV  612
NTDB id 281 KZH43 RS03550 WP 000882517.1     GYVGYDEAGQLTEKVRHNPYSLILLDEVEKAHPDVMHMFLQVLDDGRLTDGQGRTVSFKDAIIIMTSNAGTGKTE..ASV  611
NTDB id 245 SPD RS03860 WP 000882517.1       GYVGYDEAGQLTEKVRHNPYSLILLDEVEKAHPDVMHMFLQVLDDGRLTDGQGRTVSFKDAIIIMTSNAGTGKTE..ASV  611
NTDB id 243 SPR RS03635 WP 000882517.1       GYVGYDEAGQLTEKVRHNPYSLILLDEVEKAHPDVMHMFLQVLDDGRLTDGQGRTVSFKDAIIIMTSNAGTGKTE..ASV  611
NTDB id 241 SP RS04015 WP 000882523.1        GYVGYDEAGQLTEKVRHNPYSLILLDEVEKAHPDVMHMFLQVLDDGRLTDGQGRTVSFKDAIIIMTSNAGTGKTE..ASV  611
consensus                                    !!!!**!*!*!!!*!! *!!!**!*!!*!!!!!!*  * !!***!! *!!* !! ! !* ***!!!!! !   *    *!
```

logo

```
NTDB id 610 V4T04 RS10165 WP 012897346.1     GFGAKNITADYSAMKSRILEELKRHYRPEFLNRIDENIVFHSLESQEIEQIVKIMSKSLIKRLAEQDIHVKLTPSAVKLI  760
NTDB id 287 SP RS11210 WP 001109712.1        GFGAKDIRFDQENMEKRMFEELKKAYRPEFINRIDEKVVFHSLSSDHMQEVVKIMVKPLVASLTEKGIDLKLQASALKLL  755
NTDB id 290 KZH43 RS10025 WP 001109677.1     GFGAKDIRFDQENMEKRMFEELKKAYRPEFINRIDEKVVFHSLSSDHMQEVVKIMVKPLVASLAEKGIDLKLQASALKLL  755
NTDB id 289 SPD RS10700 WP 001109677.1       GFGAKDIRFDQENMEKRMFEELKKAYRPEFINRIDEKVVFHSLSSDHMQEVVKIMVKPLVASLAEKGIDLKLQASALKLL  755
NTDB id 377 SMU RS09275 WP 002262344.1       GFGAKSFSQDYKAMESRILEELKKVYRPEFINRIDEKVVFHNLGQEDIRHIVKIMVAPLIAHLADQGITLKFQPSALKHL  758
NTDB id 329 STU RS10020 WP 011225298.1       GFGAQTISHNHQAMQARIMEELKKSYRPEFINRIDEKVVFHSLEEEQLHDIVKIMVKPLISALADKGISLKFQPAALKHL  761
NTDB id 297 STER RS00545 WP 011680614.1      GFGAQTISHNHQAMQARIMEELKKSYRPEFINRIDEKVVFHSLEEEQLHDIVKIMVKPLISALADKGISLKFQPAALKHL  761
NTDB id 85 BSU 00860 NP 387967.1             GFNVQDETQNHKDMKDKVMGELKRAFRPEFINRIDEIIVFHSLEKKHLTEIVSLMSDQLTKRLKEQDLSIELTDAAKAKV  751
NTDB id 982640 NSS65 RS06880 WP 120207160.1  GFQSDQEEA...IEEQSLIDSLSSYFKPEFLNRFDSIIQFESLDRDDLVKIVDLLLNELSEQLKEQNLTVHVTNEAKEKI  647
NTDB id 601 KW2 RS02615 WP 021036805.1       GFGAAREGR.....TKSVLGQLGDFFSPEFMNRFDGIIEFSALSKENLLKIVDLMLDEVNEQIGRNDIHLSVTQAAKEKL  680
NTDB id 378 SMU RS02690 WP 002263569.1       GFGASREGR.....TNSVLGELGNFFSPEFMNRFDGIIEFQALSKDNLLQIVSLMLDDVNQRLAVNAIHLDVTDKVKEKL  687
NTDB id 281 KZH43 RS03550 WP 000882517.1     GFGAAREGR.....TNSVLGELGNFFSPEFMNRFDGIIEFKALSKDNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKL  686
NTDB id 245 SPD RS03860 WP 000882517.1       GFGAAREGR.....TNSVLGELGNFFSPEFMNRFDGIIEFKALSKDNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKL  686
NTDB id 243 SPR RS03635 WP 000882517.1       GFGAAREGR.....TNSVLGELGNFFSPEFMNRFDGIIEFKALSKDNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKL  686
NTDB id 241 SP RS04015 WP 000882523.1        GFGAAREGR.....TNSVLGELGNFFSPEFMNRFDGIIEFKALSKDNLLQIVELMLADVNKRLSSNNIRLDVTDKVKEKL  686
consensus                                    !!**                **  *!    **!!!*!! !  *  !  !* *  *  *!  *** *   *  ** *  *  **  *    *
```

logo

```
NTDB id 610 V4T04 RS10165 WP 012897346.1          AEVGFDPEYGARPLRKALQKEVEDLLSEQLLSGEIKAGNHVSIGASNKKIKIAQIV.............   816
NTDB id 287 SP RS11210 WP 001109712.1              ANQGYDPEMGARPLRRTLQTEVEDKLAELLLKGDLVAGSTLKIGVKAGQLKFDIA..............   810
NTDB id 290 KZH43 RS10025 WP 001109677.1           ANQGYDPEMGARPLRRTLQTEVEDKLAELLLKGDLVAGSILKIGVKAGQLKFDIA..............   810
NTDB id 289 SPD RS10700 WP 001109677.1             ANQGYDPEMGARPLRRTLQTEVEDKLAELLLKGDLVAGSILKIGVKAGQLKFDIA..............   810
NTDB id 377 SMU RS09275 WP 002262344.1             ALAGYDAEMGARPLRRTLQTEVEDKLAELILSGKLASGQTLKIGIQKEKLKFDIV..............   813
NTDB id 329 STU RS10020 WP 011225298.1             AKDGYDIEMGARPLRRTIQTQVEDKLSELLGGQVVSGQTLKIGCSKDKLTFTVV..............   816
NTDB id 297 STER RS00545 WP 011680614.1            AKDGYDIEMGARPLRRTIQTQVEDKLSELLGGQVVSGQTLKIGCSKDKLTFTVV..............   816
NTDB id 85 BSU 00860 NP 387967.1                   AEEGVDLEYGARPLRRAIQKHVEDRLSEELLRGNIHKGQHIVLDVEDGEFVVKTTAKTN..........   810
NTDB id 982640 NSS65 RS06880 WP 120207160.1       AELGYHPAFGARPLRRTIQEHVEDQMTEILLEEEQLSGFTVDVE.HDEIVVKKG...............   700
NTDB id 601 KW2 RS02615 WP 021036805.1             VDLGYNPAMGARPLRRTIQENIEDSIADFYIEHPEYKQLVADLI.DDKIVISNQTQETAETTDEEVPAE   748
NTDB id 378 SMU RS02690 WP 002263569.1             VDLGYDPKMGARPLRRTIQEHIEDAITDFYLEHPEQKELKAIMT.SNGKIVIKASNK.VETVTKATSD.   753
NTDB id 281 KZH43 RS03550 WP 000882517.1           VDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKDLKAVMT.SKGNIQIKSAKK.AEVKSSEKEK.   752
NTDB id 245 SPD RS03860 WP 000882517.1             VDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKDLKAVMT.SKGNIQIKSAKK.AEVKSSEKEK.   752
NTDB id 243 SPR RS03635 WP 000882517.1             VDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKDLKAVMT.SKGNIQIKSAKK.AEVKSSEKEK.   752
NTDB id 241 SP RS04015 WP 000882523.1              VDLGYDPKMGARPLRRTIQDYIEDTITDYYLENPSEKDLKAVMT.SKGNIQIKSAKK.AEVKSSEKEK.   752
consensus                                         ** !*** *!!!!!!***!  *!! *** **      *  * *    * *
```

X non conserved

X similar

X ≥ 50% conserved