```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 1177 A1552VC RS01165 WP 000422572.1     ....MELNQYLDGMLTHKASDLYITVGAPILYRVDGELRAQGEAL.SVADVTALLHAMMDDARQAEFKQTREANFAVVRD   75
NTDB id 1203 PSJM300 01605 AFN76401.1           ....MEFEKLLRLMVEKGGSDLFITAGVPPSMKVNGKILPVNKTPMSPEMTRETVHGVMNEQQRREFTENHECNFAISAR   76
NTDB id 1019 ACIAD RS04205 WP 004922051.1       ....MDFNDLLNLMAKHKASDLFITAGVEPSLKINGEITPVSKTKLDGDMIAQLIDSITTQKQRQEFIETHECNFAILNR   76
NTDB id 1307 DR RS10055 WP 010888596.1          MTSGIDITDILRLAADKGASDIILAAGLPPQFKLSGDYDAQGFEPLSASDTRKLMYSMMNERQQRIFEEKRELDFSFALG   80
NTDB id 1086 NMV RS00245 WP 002218487.1         ....MQITDLLAFGAKNKASDLHLSSGISPMIRVHGDMRRINLPEMSAEEVGNMVTSVMNDHQRKIYQQNLEVDFSFELP   76
NTDB id 1116 NGFG RS10615 WP 003690200.1        ....MQITDLLAFGAKNKASDLHLSSGISPMIRVHGDMRRINLPEMSAEEVGNMVTSVMNDHQRKIYQQNLEVDFSFELP   76
NTDB id 1185 GTF74 RS11940 WP 000350195.1       ....MDIAELLEFSVKHNASDLHLSAGVPPMVRIDGEVRKLGVPAFTHSDVHRLIFEIMNDAQRSEYEEKLEVDFSFELP   76
NTDB id 1176 A1552VC RS01160 WP 000350195.1     ....MDIAELLEFSVKHNASDLHLSAGVPPMVRIDGEVRKLGVPAFTHSDVHRLIFEIMNDAQRSEYEEKLEVDFSFELP   76
NTDB id 1283 ACE17W RS02630 WP 010947729.1      ....MDIAELLAFSVKNKSSDLHISAGMPPMIRVDGDLRKINLPPLEHKDVIKIIYDIMNDRQRKEYEEFFETDFSFEIA   76
NTDB id 1259 GC085 RS10305 WP 010947729.1       ....MDIAELLAFSVKNKSSDLHISAGMPPMIRVDGDLRKINLPPLEHKDVIKIIYDIMNDRQRKEYEEFFETDFSFEIA   76
NTDB id 1020 ACIAD RS04210 WP 011182164.1       ....MDITELLAFSVQNRASDLHLSAGIPPMIRVDGEVRRINLPAMDHSEVHNLIYDIMNDKQRRDYEEKLETDFSFEVP   76
NTDB id 1081 FDQ49 RS05335 WP 006581387.1       ....MDITELLAFSVKNGASDLHLSAGMPPMIRVDGEVRRINLPALEHKDVHRLVYDIMNDKQRRDYEEKLETDFSFEVP   76
NTDB id 1060 ABD1 RS04380 WP 000355489.1        ....MDITELLAFSVKNGASDLHLSAGMPPMIRVDGEVRRINLPALEHKDVHRLVYDIMNDKQRRDYEEKLETDFSFEVP   76
NTDB id 1040 HON27 RS13360 WP 000355489.1       ....MDITELLAFSVKNGASDLHLSAGMPPMIRVDGEVRRINLPALEHKDVHRLVYDIMNDKQRRDYEEKLETDFSFEVP   76
NTDB id 1027153 AB4P92 RS17730 WP 007953348.1   ....MDITELLAFSAKQGASDLHLSAGLPPMIRVDGDVRRINLPALDHKQVHELIYDIMNDTQRVDFEKHLETDFSFEVP   76
NTDB id 1194 PAKAF RS01995 WP 003084552.1       ....MDITELLAFSAKQGASDLHLSAGLPPMIRVDGDVRRINLPPLEHKQVHALIYDIMNDKQRKDFEEFLETDFSFEVP   76
NTDB id 1202 PSJM300 01600 AFN76400.1           ....MDITELLAFSAKQGASDLHLSSGLPPMIRVDGDVRRINLPAMDHKQVHALIYDIMNDKQRKDFEEFLETDFSFEVP   76
consensus                                           ******!****** *!!*****!*******!******** *** **  ********************** *! *!*****
```

```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 1177 A1552VC RS01165 WP 000422572.1     ..SGRFRVSAFFQRELPGAVIRRIETRIPTFEELKLPEVLQNLAIAKRGLVLVVGATGSGKSTTMAAMTGYRNQHRTGHI   153
NTDB id 1203 PSJM300 01605 AFN76401.1           G.IGRFRVSAFYQRNLAGMVLRRIETNIPTIEDLKLPDVLKKLALTKRGLVLFVGATGTGKSTSLAAMIGYRNKNSSGHI   155
NTDB id 1019 ACIAD RS04205 WP 004922051.1       EKNERFRVSAFQQRDMPGMVIRRIETKIPSPDDLHLPPILKELAMSKRGIIIFSGATGTGKSTSLASMIQHRNQHSKGHI   156
NTDB id 1307 DR RS10055 WP 010888596.1          D.KARFRVNAFMQRGNVGGVMRLIPTTVRTIAEMGLPQTVIDIANAPRGLVLVTGPTGSGKSTTLASMIDHINTTKKLHI   159
NTDB id 1086 NMV RS00245 WP 002218487.1         N.VARFRVNAFNIGRGPAAVFRTIPSTVLSLEELKAPSIFQKIAESPRGMVLVTGPTGSGKSTTLAAMINYINETQPAHI   155
NTDB id 1116 NGFG RS10615 WP 003690200.1        N.VARFRVNAFNTGRGPAAVFRTIPSTVLSLEELKAPSIFQKIAESPRGMVLVTGPTGSGKSTTLAAMINYINETQPAHI   155
NTDB id 1185 GTF74 RS11940 WP 000350195.1       N.VGRFRVNAFHQARGCSAVFRTIPTVIPTLEQLDAPEIFSKIANYEKGLVLVTGPTGSGKSTTLAAMVNYVNAHHNKHI   155
NTDB id 1176 A1552VC RS01160 WP 000350195.1     N.VGRFRVNAFHQARGCSAVFRTIPTVIPTLEQLDAPEIFSKIANYEKGLVLVTGPTGSGKSTTLAAMVNYVNAHHNKHI   155
NTDB id 1283 ACE17W RS02630 WP 010947729.1      N.LARFRVNAFNQSRGAAAVFRTIPSEILSMEDLGLPPIFKEMASFSRGLVLVTGPTGSGKSTTLAAVIDYINSSRYEHI   155
NTDB id 1259 GC085 RS10305 WP 010947729.1       N.LARFRVNAFNQSRGAAAVFRTIPSEILSMEDLGLPPIFKEMASFSRGLVLVTGPTGSGKSTTLAAVIDYINSSRYEHI   155
NTDB id 1020 ACIAD RS04210 WP 011182164.1       N.LARFRVNVFNQNRGAGAVFRTIPSQVLTLEELGLGKIFRDICDYPRGLVLVTGPTGSGKSTTLAAMLDYINNHRYDHI   155
NTDB id 1081 FDQ49 RS05335 WP 006581387.1       N.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEDLGLGQIFKDICDYPRGIVLVTGPTGSGKSTTLAAMLDYINENRYDHI   155
NTDB id 1060 ABD1 RS04380 WP 000355489.1        N.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEDLGLGQIFKDICDYPRGIVLVTGPTGSGKSTTLAAMLDYINENRYDHI   155
NTDB id 1040 HON27 RS13360 WP 000355489.1       N.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEDLGLGQIFKDICDYPRGIVLVTGPTGSGKSTTLAAMLDYINENRYDHI   155
NTDB id 1027153 AB4P92 RS17730 WP 007953348.1   G.VARFRVNAFNQNRGAGAVFRTIPSKVLSMEDLAMGDVFRKITDAPRGLVLVTGPTGSGKSTTLAAMIDYLNTHRHHHI   155
NTDB id 1194 PAKAF RS01995 WP 003084552.1       G.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEELGMGEVFKRVSDVPRGLVLVTGPTGSGKSTTLAAMLDYLNNTKYHHI   155
NTDB id 1202 PSJM300 01600 AFN76400.1           G.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEDLGMGEVFRKITDVPRGLVLVTGPTGSGKSTTLAAMLDYLNNTKYHHI   155
consensus                                       * **!!!!**!** *****!*!*!** ********** *** **  **!*****!*!!*!!!!**!******!  *  !!
```

```
logo
NTDB id 1177 A1552VC RS01165 WP 000422572.1    LTVEDPIEFVHEHKRCIVTQREVGLDTESYEVALKNSLRQAPDMILIGEIRSRETMEYAMTFAETGHLCMATLHANNANQ   233
NTDB id 1203 PSJM300 01605 AFN76401.1          ISIEDPIEFIHQHQNCIVTQREVGIDTDSFEVALKNTLRQAPDVILIGEVRTRETMDHAVAFAETGHLCLATLHANNANQ   235
NTDB id 1019 ACIAD RS04205 WP 004922051.1      ITIEDPIEFIHEHAGCIITQREVGIDTDSFEIALKNTLRQAPDVILIGEIRSREVMDYALAFAETGHLVFATLHANNANQ   236
NTDB id 1307 DR RS10055 WP 010888596.1         LTIEDPIEFMHPNKASIINQREVGSDTLSFDDALRAALRQAPDVILVGEMRDYETIKAAVTAAETGHLVMGTLHTNSAPE   239
NTDB id 1086 NMV RS00245 WP 002218487.1        LTIEDPIEFVHQSKKSLINQRELHQHTLSFANALRSALREDPDVILVGEMRDPETIGLALTAAETGHLVFGTLHTTGAAK   235
NTDB id 1116 NGFG RS10615 WP 003690200.1       LTIEDPIEFVHQSKKSLINQRELHQHTLSFANALSSALREDPDVILVGEMRDPETIGLALTAAETGHLVFGTLHTTGAAK   235
NTDB id 1185 GTF74 RS11940 WP 000350195.1      LTIEDPIEFVHSNNKCLINQREVHRDTHSFKNALRSALREDPDVILVGELRDQETISLALTAAETGHLVFGTLHTSSAAK   235
NTDB id 1176 A1552VC RS01160 WP 000350195.1    LTIEDPIEFVHSNNKCLINQREVHRDTHSFKNALRSALREDPDVILVGELRDQETISLALTAAETGHLVFGTLHTSSAAK   235
NTDB id 1283 ACE17W RS02630 WP 010947729.1     LTVEDPIEFVHQSKKCLVNQREVHKDTLSFNAALRSALREDPDIILVGELRDLETIRLAMTAAETGHLVFGTLHTNSATK   235
NTDB id 1259 GC085 RS10305 WP 010947729.1      LTVEDPIEFVHQSKKCLVNQREVHKDTLSFNAALRSALREDPDIILVGELRDLETIRLAMTAAETGHLVFGTLHTNSATK   235
NTDB id 1020 ACIAD RS04210 WP 011182164.1      LTVEDPIEFVHEPKKCLINQREVHRDTLGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTSAAK   235
NTDB id 1081 FDQ49 RS05335 WP 006581387.1      LTVEDPIEFVHQSKKCLINQREVHRDTHGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTSAAK   235
NTDB id 1060 ABD1 RS04380 WP 000355489.1       LTVEDPIEFVHQSKKCLINQREVHRDTHGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTSAAK   235
NTDB id 1040 H0N27 RS13360 WP 000355489.1      LTVEDPIEFVHQSKKCLINQREVHRDTHGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTSAAK   235
NTDB id 1027153 AB4P92 RS17730 WP 007953348.1 LTIEDPIEFVHESRKCLINQREVHRDTRSFATALRSALREDPDVILVGEMRDLETIRLALTAAETGHLVFGTLHTTSAAK   235
NTDB id 1194 PAKAF RS01995 WP 003084552.1     LTIEDPIEFVHESKKCLVNQREVHRDTLGFSEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTSAAK   235
NTDB id 1202 PSJM300 01600 AFN76400.1         LTIEDPIEFVHESKKCLVNQREVHRDTLGFSEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTSAAK   235
consensus                                     ***!!!!!!*! ******!!!*****! **  !!***!!**!!*!!*!!*!* !****!***!!!!!!***!!!***!**
```

```
logo
NTDB id 1177 A1552VC RS01165 WP 000422572.1    ALERILHLVPKEQREQFLLDLSLNLKGVIAQQLLRDKNGKGRHGVFEVLLNSPRIADLIRRGELHELKATMARSQEVGMQ   313
NTDB id 1203 PSJM300 01605 AFN76401.1          ALDRIINFFPADRQNQVWMDLSLNLKAIVAQQLVPTPDGKGRRAVIEVLINTPLAADLIRKGEVHELKGLMKRSTDLGMQ   315
NTDB id 1019 ACIAD RS04205 WP 004922051.1      TLERIIHFFDADRHQQIFMDLSLNLKAVISQQLIPTHDGQSRRAAVEVLINTPLLSDYIRQGEIYKIKELMARSGELGMQ   316
NTDB id 1307 DR RS10055 WP 010888596.1         SIDRIVDVFPEEQQEQIRVQLANNLVAVMTQQLLPRADGQGRVLAYEILLANPAVRALIREGKTFQITSVMQTGAREGMV   319
NTDB id 1086 NMV RS00245 WP 002218487.1        TVDRIVDVFPAGEKEMVRSMLSESLTAVISQNLLKTHDGNGRVASHEILIANPAVRNLIRENKITQINSVLQTGQASGMQ   315
NTDB id 1116 NGFG RS10615 WP 003690200.1       TVDRIVDVFPAGEKEMVRSMLSESLTAVISQNLLKTHDGNGRVASHEILIANPAVRNLIRENKITQINSVLQTGQASGMQ   315
NTDB id 1185 GTF74 RS11940 WP 000350195.1      TIDRIIDVFPGSDKDMVRSMLSESLRAVIAQKLLKR.VGGGRVACHEIMLATPAIRNLIREDKVAQMYSIIQTGAAHGMQ   314
NTDB id 1176 A1552VC RS01160 WP 000350195.1    TIDRIIDVFPGSDKDMVRSMLSESLRAVIAQKLLKR.VGGGRVACHEIMLATPAIRNLIREDKVAQMYSIIQTGAAHGMQ   314
NTDB id 1283 ACE17W RS02630 WP 010947729.1     TINRIIDVFPAEEKSMVRSMLSESLQAVVAQSLLKK.NKGGRVAALEIMMCTGAIRNLIREDKIAQMYSSIQTGQAKGMQ   314
NTDB id 1259 GC085 RS10305 WP 010947729.1      TINRIIDVFPAEEKSMVRSMLSESLQAVVAQSLLKK.NKGGRVAALEIMMCTGAIRNLIREDKIAQMYSSIQTGQAKGMQ   314
NTDB id 1020 ACIAD RS04210 WP 011182164.1      TIDRIIDVFPAEEKDMVRTMLSESLQAVISQTLLKK.EGGGRVAAHEIMIGIPAIRNLIREGKVAQMYSSIQTGATHGMT   314
NTDB id 1081 FDQ49 RS05335 WP 006581387.1      TIDRVIDVFPAEEKDMVRAMLSESLQAVISQTLLKK.NGGGRVAAHEIMIGIPAIRNLIRENKVAQMYSAIQTGANHGMT   314
NTDB id 1060 ABD1 RS04380 WP 000355489.1       TIDRVIDVFPAEEKDMVRAMLSESLQAVISQTLLKK.NGGGRVAAHEIMIGIPAIRNLIRENKVAQMYSAIQTGANHGMT   314
NTDB id 1040 H0N27 RS13360 WP 000355489.1      TIDRVIDVFPAEEKDMVRAMLSESLQAVISQTLLKK.NGGGRVAAHEIMIGIPAIRNLIRENKVAQMYSAIQTGANHGMT   314
NTDB id 1027153 AB4P92 RS17730 WP 007953348.1 TIDRVVDVFPGDEKSMVRSMLSESLLAVVSQTLIKK.IGGGRVAAHEIMLGTSAIRNLIREDKVAQMYSAIQTGGSLGMQ   314
NTDB id 1194 PAKAF RS01995 WP 003084552.1     TIDRVVDVFPAEEKAMVRSMLSESLQSVISQTLIKK.IGGGRVAAHEIMIGTPAIRNLIREDKVAQMYSAIQTGGSLGMQ   314
NTDB id 1202 PSJM300 01600 AFN76400.1         TIDRVVDVFPAEEKSMVRSMLSESLQAVISQTLLKK.VGGGRVAAHEIMIGTPAIRNLIREDKVAQMYSSIQTGGSLGMQ   314
consensus                                     ***!*****************!***! ****! !***  ***!****!************!!* ******* *****  !!*
```

```
logo

NTDB id 1177 A1552VC RS01165 WP 000422572.1     TFDQALYQLVVDDKISEQDALHSADSANDLRLMLKTKRGDDY...GSGSLQNVKI........DME..............   368
NTDB id 1203 PSJM300 01605 AFN76401.1           TFDQALYNLYVQGEITYEDALLHADSSNDLRLMIKLGSETDGEHLTSVS.QGLTL........EMSDDDPGRSFR.....   381
NTDB id 1019 ACIAD RS04205 WP 004922051.1       TFDQALFDLYDHQHISYADALKHADSPNNLRLQIKLSEEANKPLDNRERMSEMER........KMTFDGQRRNLK.....   383
NTDB id 1307 DR RS10055 WP 010888596.1          TMDAYLAGLFRRHLITYDKGLERAIDPKEFARLANDASAGL....GGASMTPAAPPVPAYNSASSSSTGRGGDFGRGAAA   395
NTDB id 1086 NMV RS00245 WP 002218487.1         TMDQSLQSLVRQGLIAPEVARRRAQNSESMSF.................................................   347
NTDB id 1116 NGFG RS10615 WP 003690200.1        TMDQSLQSLVRQGLIAPEAARRRAQNSESMSF.................................................   347
NTDB id 1185 GTF74 RS11940 WP 000350195.1       TMEQNAKQLIARGVVDAQEVQSKIELDLKAF...................................................   345
NTDB id 1176 A1552VC RS01160 WP 000350195.1     TMEQNAKQLIARGVVDAQEVQSKIELDLKAF...................................................   345
NTDB id 1283 ACE17W RS02630 WP 010947729.1      TLDQHLTELVNKNIISKHTAHEAALNKSLF....................................................   344
NTDB id 1259 GC085 RS10305 WP 010947729.1       TLDQHLTELVNKNIISKHTAHEAALNKSLF....................................................   344
NTDB id 1020 ACIAD RS04210 WP 011182164.1       TLDQSLKQLLAKGIINLPTARAVAKSPESF....................................................   344
NTDB id 1081 FDQ49 RS05335 WP 006581387.1       TLDQSLKGLVSRGVISPQTARTAAKQPESFL...................................................   345
NTDB id 1060 ABD1 RS04380 WP 000355489.1        TLDQSLKGLVARGVISPQTARTAAKQPESFL...................................................   345
NTDB id 1040 H0N27 RS13360 WP 000355489.1       TLDQSLKGLVARGVISPQTARTAAKQPESFL...................................................   345
NTDB id 1027153 AB4P92 RS17730 WP 007953348.1   TLDMCLKDLVTKGLISREHAREKARTPDNF....................................................   344
NTDB id 1194 PAKAF RS01995 WP 003084552.1       TLDMCLKGLVAKGLISRENAREKAKIPENF....................................................   344
NTDB id 1202 PSJM300 01600 AFN76400.1           TLDSCLKGLLAKGLISRDSAKEKAKQPENF....................................................   344
consensus                                       !*** *  !* *****   *   *     *

logo

NTDB id 1177 A1552VC RS01165 WP 000422572.1     .......................   368
NTDB id 1203 PSJM300 01605 AFN76401.1           .......................   381
NTDB id 1019 ACIAD RS04205 WP 004922051.1       .......................   383
NTDB id 1307 DR RS10055 WP 010888596.1          PATPAAPAAGRSEPGRAGGFGRR   418
NTDB id 1086 NMV RS00245 WP 002218487.1         .......................   347
NTDB id 1116 NGFG RS10615 WP 003690200.1        .......................   347
NTDB id 1185 GTF74 RS11940 WP 000350195.1       .......................   345
NTDB id 1176 A1552VC RS01160 WP 000350195.1     .......................   345
NTDB id 1283 ACE17W RS02630 WP 010947729.1      .......................   344
NTDB id 1259 GC085 RS10305 WP 010947729.1       .......................   344
NTDB id 1020 ACIAD RS04210 WP 011182164.1       .......................   344
NTDB id 1081 FDQ49 RS05335 WP 006581387.1       .......................   345
NTDB id 1060 ABD1 RS04380 WP 000355489.1        .......................   345
NTDB id 1040 H0N27 RS13360 WP 000355489.1       .......................   345
NTDB id 1027153 AB4P92 RS17730 WP 007953348.1   .......................   344
NTDB id 1194 PAKAF RS01995 WP 003084552.1       .......................   344
NTDB id 1202 PSJM300 01600 AFN76400.1           .......................   344
consensus
```

X non conserved
X similar
X ≥ 50% conserved