```
logo
NTDB id 1177 A1552VC RS01165 WP 000422572.1   ..........MELNQYLDGMLTHKASDLYITVGAPILYRVDGELRAQGE.ALSVADVTALLHAMMDDARQAEFKQTREAN   69
NTDB id 1122872 EL216 RS09170 WP 085391155.1  MEQNNTLSAKEEIYSWLRTLNKYKGSDLFITANFPPAMKLDGKITRITDTPLTPERCMEIAFAIMSPKQSEEFMATNECN   80
NTDB id 1203 PSJM300 01605 AFN76401.1         ..........MEFEKLLRLMVEKGGSDLFITAGVPPSMKVNGKILPVNKTPMSPEMTRETVHGVMNEQQRREFTENHECN   70
NTDB id 1019 ACIAD RS04205 WP 004922051.1     ..........MDFNDLLNLMAKHKASDLFITAGVEPSLKINGEITPVSKTKLDGDMIAQLIDSITTQKQRQEFIETHECN   70
NTDB id 1307 DR RS10055 WP 010888596.1        ......MTSGIDITDILRLAADKGASDIILAAGLPPQFKLSGDYDAQGFEPLSASDTRKLMYSMMNERQQRIFEEKRELD   74
NTDB id 1086 NMV RS00245 WP 002218487.1       ..........MQITDLLAFGAKNKASDLHLSSGISPMIRVHGDMRRINLPEMSAEEVGNMVTSVMNDHQRKIYQQNLEVD   70
NTDB id 1283 ACE17W RS02630 WP 010947729.1    ..........MDIAELLAFSVKNKSSDLHISAGMPPMIRVDGDLRKINLPPLEHKDVIKIIYDIMNDRQRKEYEEFFETD   70
NTDB id 1259 GC085 RS10305 WP 010947729.1     ..........MDIAELLAFSVKNKSSDLHISAGMPPMIRVDGDLRKINLPPLEHKDVIKIIYDIMNDRQRKEYEEFFETD   70
NTDB id 1194 PAKAF RS01995 WP 003084552.1     ..........MDITELLAFSAKQGASDLHLSAGLPPMIRVDGDVRRINLPPLEHKQVHALIYDIMNDKQRKDFEEFLETD   70
NTDB id 1202 PSJM300 01600 AFN76400.1         ..........MDITELLAFSAKQGASDLHLSSGLPPMIRVDGDVRRINLPAMDHKQVHALIYDIMNDKQRKDFEEFLETD   70
NTDB id 1020 ACIAD RS04210 WP 011182164.1     ..........MDITELLAFSVQNRASDLHLSAGIPPMIRVDGEVRRINLPAMDHSEVHNLIYDIMNDKQRRDYEEKLETD   70
NTDB id 1081 FDQ49 RS05335 WP 006581387.1     ..........MDITELLAFSVKNGASDLHLSAGMPPMIRVDGEVRRINLPALEHKDVHRLVYDIMNDKQRRDYEEKLETD   70
NTDB id 1060 ABD1 RS04380 WP 000355489.1      ..........MDITELLAFSVKNGASDLHLSAGMPPMIRVDGEVRRINLPALEHKDVHRLVYDIMNDKQRRDYEEKLETD   70
NTDB id 1040 HON27 RS13360 WP 000355489.1     ..........MDITELLAFSVKNGASDLHLSAGMPPMIRVDGEVRRINLPALEHKDVHRLVYDIMNDKQRRDYEEKLETD   70
consensus                                      ******!****** *!!*************!******** *** **  ****************  !**

logo
NTDB id 1177 A1552VC RS01165 WP 000422572.1   FAVVRD..SGRFRVSAFFQRELPGAVIRRIETRIPTFEELKLPEVLQNLAIAKRGLVLVVGATGSGKSTTMAAMTGYRNQ   147
NTDB id 1122872 EL216 RS09170 WP 085391155.1 FAISTPD.TSRFRVNAMVQRGATALVFRTITSNIPKFETLNLPPILQQVAMQKRGLVIFVGGTGSGKSTSLASMIDYRNE   159
NTDB id 1203 PSJM300 01605 AFN76401.1         FAISARG.IGRFRVSAFYQRNLAGMVLRRIETNIPTIEDLKLPDVLKKLALTKRGLVLFVGATGTGKSTSLAAMIGYRNK   149
NTDB id 1019 ACIAD RS04205 WP 004922051.1     FAILNREKNERFRVSAFQQRDMPGMVIRRIETKIPSPDDLHLPPILKELAMSKRGIIIFSGATGTGKSTSLASMIQHRNQ   150
NTDB id 1307 DR RS10055 WP 010888596.1        FSFALGD.KARFRVNAFMQRGNVGGVMRLIPTTVRTIAEMGLPQTVIDIANAPRGLVLVTGPTGSGKSTTLASMIDHINT   153
NTDB id 1086 NMV RS00245 WP 002218487.1       FSFELPN.VARFRVNAFNIGRGPAAVFRTIPSTVLSLEELKAPSIFQKIAESPRGMVLVTGPTGSGKSTTLAAMINYINE   149
NTDB id 1283 ACE17W RS02630 WP 010947729.1    FSFEIAN.LARFRVNAFNQSRGAAAVFRTIPSEILSMEDLGLPPIFKEMASFSRGLVLVTGPTGSGKSTTLAAVIDYINS   149
NTDB id 1259 GC085 RS10305 WP 010947729.1     FSFEIAN.LARFRVNAFNQSRGAAAVFRTIPSEILSMEDLGLPPIFKEMASFSRGLVLVTGPTGSGKSTTLAAVIDYINS   149
NTDB id 1194 PAKAF RS01995 WP 003084552.1     FSFEVPG.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEELGMGEVFKRVSDVPRGLVLVTGPTGSGKSTTLAAMLDYLNN   149
NTDB id 1202 PSJM300 01600 AFN76400.1         FSFEVPG.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEDLGMGEVFRKITDVPRGLVLVTGPTGSGKSTTLAAMLDYLNN   149
NTDB id 1020 ACIAD RS04210 WP 011182164.1     FSFEVPN.LARFRVNVFNQNRGAGAVFRTIPSQVLTLEELGLGKIFRDICDYPRGLVLVTGPTGSGKSTTLAAMLDYINN   149
NTDB id 1081 FDQ49 RS05335 WP 006581387.1     FSFEVPN.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEDLGLGQIFKDICDYPRGIVLVTGPTGSGKSTTLAAMLDYINE   149
NTDB id 1060 ABD1 RS04380 WP 000355489.1      FSFEVPN.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEDLGLGQIFKDICDYPRGIVLVTGPTGSGKSTTLAAMLDYINE   149
NTDB id 1040 HON27 RS13360 WP 000355489.1     FSFEVPN.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEDLGLGQIFKDICDYPRGIVLVTGPTGSGKSTTLAAMLDYINE   149
consensus                                     !*****  **!!!!*****  *****!*!*!** ********** ******  *!!*****!*!!*!!!!**!******!

logo
NTDB id 1177 A1552VC RS01165 WP 000422572.1   HRTGHILTVEDPIEFVHEHKRCIVTQREVGLDTESYEVALKNSLRQAPDMILIGEIRSRETMEYAMTFAETGHLCMATLH   227
NTDB id 1122872 EL216 RS09170 WP 085391155.1 NSQDHIITIEDPIEFVHEHKNCIITQREVGVDTENWFAALKNTLRQAPDVILIGEIRDRETMDYAIAFSETGHLCMATLH   239
NTDB id 1203 PSJM300 01605 AFN76401.1         NSSGHIISIEDPIEFIHQHQNCIVTQREVGIDTDSFEVALKNTLRQAPDVILIGEVRTRETMDHAVAFAETGHLCLATLH   229
NTDB id 1019 ACIAD RS04205 WP 004922051.1     HSKGHIITIEDPIEFIHEHAGCIITQREVGIDTDSFEIALKNTLRQAPDVILIGEIRSREVMDYALAFAETGHLVFATLH   230
NTDB id 1307 DR RS10055 WP 010888596.1        TKKLHILTIEDPIEFMHPNKASIINQREVGSDTLSFDDALRAALRQAPDVILVGEMRDYETIKAAVTAAETGHLVMGTLH   233
NTDB id 1086 NMV RS00245 WP 002218487.1       TQPAHILTIEDPIEFVHQSKKSLINQRELHQHTLSFANALRSALREDPDVILVGEMRDPETIGLALTAAETGHLVFGTLH   229
NTDB id 1283 ACE17W RS02630 WP 010947729.1    SRYEHILTVEDPIEFVHQSKKCLVNQREVHKDTLSFNAALRSALREDPDIILVGELRDLETIRLAMTAAETGHLVFGTLH   229
NTDB id 1259 GC085 RS10305 WP 010947729.1     SRYEHILTVEDPIEFVHQSKKCLVNQREVHKDTLSFNAALRSALREDPDIILVGELRDLETIRLAMTAAETGHLVFGTLH   229
NTDB id 1194 PAKAF RS01995 WP 003084552.1     TKYHHILTIEDPIEFVHESKKCLVNQREVHRDTLGFSEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLH   229
NTDB id 1202 PSJM300 01600 AFN76400.1         TKYHHILTIEDPIEFVHESKKCLVNQREVHRDTLGFSEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLH   229
NTDB id 1020 ACIAD RS04210 WP 011182164.1     HRYDHILTVEDPIEFVHEPKKCLINQREVHRDTLGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLH   229
NTDB id 1081 FDQ49 RS05335 WP 006581387.1     NRYDHILTVEDPIEFVHQSKKCLINQREVHRDTHGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLH   229
NTDB id 1060 ABD1 RS04380 WP 000355489.1      NRYDHILTVEDPIEFVHQSKKCLINQREVHRDTHGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLH   229
NTDB id 1040 HON27 RS13360 WP 000355489.1     NRYDHILTVEDPIEFVHQSKKCLINQREVHRDTHGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLH   229
consensus                                      **  !!***!!!!!!*!  *******!!!****!   *   !!***!!**!!*!!*!!*!**!****!****!!!!!***!!!
```

```
logo
                                                   TTSAAKTIDRIIDVFPAEEKSMVRSMLSESLQAVISQTLLKK.NGGGRVAAHEIMIGTPAIRNLIREGKVAQMYSSIQTG
                                                   ANNANQALERILHLVPKEQREQFLLDLSLNLKGVIAQQLLRDKNGKGRHGVFEVLLNSPRIADLIRRGELHELKATMARS
NTDB id 1177 A1552VC RS01165 WP 000422572.1        ANNANQALERILHLVPKEQREQFLLDLSLNLKGVIAQQLLRDKNGKGRHGVFEVLLNSPRIADLIRRGELHELKATMARS   307
NTDB id 1122872 EL216 RS09170 WP 085391155.1       ANSTNQALDRIINFFPEERRVQLLTDLSLNLQAFISQRLIPREGGKGRVAAVEVLLNSPLVAELIHNGDVHSIKEVMKKS   319
NTDB id 1203 PSJM300 01605 AFN76401.1              ANNANQALDRIINFFPADRQNQVWMDLSLNLKAIVAQQLVPTPDGKGRRAVIEVLINTPLAADLIRKGEVHELKGLMKRS   309
NTDB id 1019 ACIAD RS04205 WP 004922051.1          ANNANQTLERIIHFFDADRHQQIFMDLSLNLKAVISQQLIPTHDGQSRRAAVEVLINTPLLSDYIRQGEIYKIKELMARS   310
NTDB id 1307 DR RS10055 WP 010888596.1             TNSAPESIDRIVDVFPEEQQEQIRVQLANNLVAVMTQQLLPRADGQGRVLAYEILLANPAVRALIREGKTFQITSVMQTG   313
NTDB id 1086 NMV RS00245 WP 002218487.1            TTGAAKTVDRIVDVFPAGEKEMVRSMLSESLTAVISQNLLKTHDGNGRVASHEILIANPAVRNLIRENKITQINSVLQTG   309
NTDB id 1283 ACE17W RS02630 WP 010947729.1         TNSATKTINRIIDVFPAEEKSMVRSMLSESLQAVVAQSLLKK.NKGGRVAALEIMMCTGAIRNLIREDKIAQMYSSIQTG   308
NTDB id 1259 GC085 RS10305 WP 010947729.1          TNSATKTINRIIDVFPAEEKSMVRSMLSESLQAVVAQSLLKK.NKGGRVAALEIMMCTGAIRNLIREDKIAQMYSSIQTG   308
NTDB id 1194 PAKAF RS01995 WP 003084552.1          TTSAAKTIDRVVDVFPAEEKAMVRSMLSESLQSVISQTLIKK.IGGGRVAAHEIMIGTPAIRNLIREDKVAQMYSAIQTG   308
NTDB id 1202 PSJM300 01600 AFN76400.1              TTSAAKTIDRVVDVFPAEEKSMVRSMLSESLQAVISQTLLKK.VGGGRVAAHEIMIGTPAIRNLIREDKVAQMYSSIQTG   308
NTDB id 1020 ACIAD RS04210 WP 011182164.1          TTSAAKTIDRIIDVFPAEEKDMVRTMLSESLQAVISQTLLKK.EGGGRVAAHEIMIGIPAIRNLIREGKVAQMYSSIQTG   308
NTDB id 1081 FDQ49 RS05335 WP 006581387.1          TTSAAKTIDRVIDVFPAEEKDMVRAMLSESLQAVISQTLLKK.NGGGRVAAHEIMIGIPAIRNLIRENKVAQMYSAIQTG   308
NTDB id 1060 ABD1 RS04380 WP 000355489.1           TTSAAKTIDRVIDVFPAEEKDMVRAMLSESLQAVISQTLLKK.NGGGRVAAHEIMIGIPAIRNLIRENKVAQMYSAIQTG   308
NTDB id 1040 HON27 RS13360 WP 000355489.1          TTSAAKTIDRVIDVFPAEEKDMVRAMLSESLQAVISQTLLKK.NGGGRVAAHEIMIGIPAIRNLIRENKVAQMYSAIQTG   308
consensus                                          * ** ****!********** *** *!***!*****!*!***  ***!*** !************!** ******* ****
```

```
logo
                                                   QALGMQTLDQSLKGLVAKGLLSEQTAREAAKSPESF
                                                   AALGMQTLDQSLKGLVAKGLLSEQTAREAAKSPESF
NTDB id 1177 A1552VC RS01165 WP 000422572.1        QEVGMQTFDQALYQLVVDDKISEQDALHSADSANDLRLMLKTKRGDDYGS.....G...SLQNVKIDME...........   368
NTDB id 1122872 EL216 RS09170 WP 085391155.1       QALGMQTFDQALYELYEGGLISFQDAIKNADSANDLRLDIQLRSRRAQNA.....GPDLELI..................   376
NTDB id 1203 PSJM300 01605 AFN76401.1              TDLGMQTFDQALYNLYVQGEITYEDALLHADSSNDLRLMIKLGSETDGEH.....LTSVS.QGLTLEMSDDDPGRSFR..   381
NTDB id 1019 ACIAD RS04205 WP 004922051.1          GELGMQTFDQALFDLYDHQHISYADALKHADSPNNLRLQIKLSEEANKPL.....DNRERMSEMERKMTFDGQRRNLK..   383
NTDB id 1307 DR RS10055 WP 010888596.1             AREGMVTMDAYLAGLFRRHLITYDKGLERAIDPKEFARLANDASAGLGGASMTPAAPPVPAYNS.ASSSSTGRGGDFGRG   392
NTDB id 1086 NMV RS00245 WP 002218487.1            QASGMQTMDQSLQSLVRQGLIAPEVARRRAQNSESMSF...........................................   347
NTDB id 1283 ACE17W RS02630 WP 010947729.1         QAKGMQTLDQHLTELVNKNIISKHTAHEAALNKSLF..............................................   344
NTDB id 1259 GC085 RS10305 WP 010947729.1          QAKGMQTLDQHLTELVNKNIISKHTAHEAALNKSLF..............................................   344
NTDB id 1194 PAKAF RS01995 WP 003084552.1          GSLGMQTLDMCLKGLVAKGLISRENAREKAKIPENF..............................................   344
NTDB id 1202 PSJM300 01600 AFN76400.1              GSLGMQTLDSCLKGLLAKGLISRDSAKEKAKQPENF..............................................   344
NTDB id 1020 ACIAD RS04210 WP 011182164.1          ATHGMTTLDQSLKQLLAKGIINLPTARAVAKSPESF..............................................   344
NTDB id 1081 FDQ49 RS05335 WP 006581387.1          ANHGMTTLDQSLKGLVSRGVISPQTARTAAKQPESFL.............................................   345
NTDB id 1060 ABD1 RS04380 WP 000355489.1           ANHGMTTLDQSLKGLVARGVISPQTARTAAKQPESFL.............................................   345
NTDB id 1040 HON27 RS13360 WP 000355489.1          ANHGMTTLDQSLKGLVARGVISPQTARTAAKQPESFL.............................................   345
consensus                                          *  !!*!*!* !  !* ***!*   *   !  *  *
```

```
logo
                                                   AAAPATPAAPAAGRSEPGRAGGFGRR
NTDB id 1177 A1552VC RS01165 WP 000422572.1        ..........................   368
NTDB id 1122872 EL216 RS09170 WP 085391155.1       ..........................   376
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             AAAPATPAAPAAGRSEPGRAGGFGRR   418
NTDB id 1086 NMV RS00245 WP 002218487.1            ..........................   347
NTDB id 1283 ACE17W RS02630 WP 010947729.1         ..........................   344
NTDB id 1259 GC085 RS10305 WP 010947729.1          ..........................   344
NTDB id 1194 PAKAF RS01995 WP 003084552.1          ..........................   344
NTDB id 1202 PSJM300 01600 AFN76400.1              ..........................   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 HON27 RS13360 WP 000355489.1          ..........................   345
consensus
```

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