```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 1177 A1552VC RS01165 WP 000422572.1     .......MELNQYLDGMLTHKASDLYITVGAPILYRVDGELRAQGEALSVA.DVTALLHAMMDDARQAEFKQTREANFAV    72
NTDB id 1019 ACIAD RS04205 WP 004922051.1       .......MDFNDLLNLMAKHKASDLFITAGVEPSLKINGEITPVSKTKLDGDMIAQLIDSITTQKQRQEFIETHECNFAI    73
NTDB id 1067407 ACHFB9 RS01155 WP 417069145.1  MERDQALKFMHDLLRLMISKRGSDLFITAGFPPAIKVDGKIVPQSNQVLTAQHTAELVRSVMNDRQAAEFESTKECNFAI    80
NTDB id 1203 PSJM300 01605 AFN76401.1           .......MEFEKLLRLMVEKGGSDLFITAGVPPSMKVNGKILPVNKTPMSPEMTRETVHGVMNEQQRREFTENHECNFAI    73
NTDB id 1307 DR RS10055 WP 010888596.1          ...MTSGIDITDILRLAADKGASDIILAAGLPPQFKLSGDYDAQGFEPLSASDTRKLMYSMMNERQQRIFEEKRELDFSF    77
NTDB id 1283 ACE17W RS02630 WP 010947729.1      .......MDIAELLAFSVKNKSSDLHISAGMPPMIRVDGDLRKINLPPLEHKDVIKIIYDIMNDRQRKEYEEFFETDFSF    73
NTDB id 1259 GC085 RS10305 WP 010947729.1       .......MDIAELLAFSVKNKSSDLHISAGMPPMIRVDGDLRKINLPPLEHKDVIKIIYDIMNDRQRKEYEEFFETDFSF    73
NTDB id 1194 PAKAF RS01995 WP 003084552.1       .......MDITELLAFSAKQGASDLHLSAGLPPMIRVDGDVRRINLPPLEHKQVHALIYDIMNDKQRKDFEEFLETDFSF    73
NTDB id 1202 PSJM300 01600 AFN76400.1           .......MDITELLAFSAKQGASDLHLSSGLPPMIRVDGDVRRINLPAMDHKQVHALIYDIMNDKQRKDFEEFLETDFSF    73
NTDB id 1020 ACIAD RS04210 WP 011182164.1       .......MDITELLAFSVQNRASDLHLSAGIPPMIRVDGEVRRINLPAMDHSEVHNLIYDIMNDKQRRDYEEKLETDFSF    73
NTDB id 1081 FDQ49 RS05335 WP 006581387.1       .......MDITELLAFSVKNGASDLHLSAGMPPMIRVDGEVRRINLPALEHKDVHRLVYDIMNDKQRRDYEEKLETDFSF    73
NTDB id 1060 ABD1 RS04380 WP 000355489.1        .......MDITELLAFSVKNGASDLHLSAGMPPMIRVDGEVRRINLPALEHKDVHRLVYDIMNDKQRRDYEEKLETDFSF    73
NTDB id 1040 HON27 RS13360 WP 000355489.1       .......MDITELLAFSVKNGASDLHLSAGMPPMIRVDGEVRRINLPALEHKDVHRLVYDIMNDKQRRDYEEKLETDFSF    73
consensus                                                *** **!****** *!!*****!********!******** *** **  ****************  !**!**

logo
NTDB id 1177 A1552VC RS01165 WP 000422572.1     VRD..SGRFRVSAFFQRELPGAVIRRIETRIPTFEELKLPEVLQNLAIAKRGLVLVVGATGSGKSTTMAAMTGYRNQHRT   150
NTDB id 1019 ACIAD RS04205 WP 004922051.1       LNREKNERFRVSAFQQRDMPGMVIRRIETKIPSPDDLHLPPILKELAMSKRGIIIFSGATGTGKSTSLASMIQHRNQHSK   153
NTDB id 1067407 ACHFB9 RS01155 WP 417069145.1  SPAG.IGRFRTNAFVQQSRVGMVCRTIAQKIPTLDELGMPQVLKDIAMSKRGLVIFVGGTGTGKTTSLAGLVDYRNENSF   159
NTDB id 1203 PSJM300 01605 AFN76401.1           SARG.IGRFRVSAFYQRNLAGMVLRRIETNIPTIEDLKLPDVLKKLALTKRGLVLFVGATGTGKSTSLAAMIGYRNKNSS   152
NTDB id 1307 DR RS10055 WP 010888596.1          ALGD.KARFRVNAFMQRGNVGGVMRLIPTTVRTIAEMGLPQTVIDIANAPRGLVLVTGPTGSGKSTTLASMIDHINTTKK   156
NTDB id 1283 ACE17W RS02630 WP 010947729.1      EIAN.LARFRVNAFNQSRGAAAVFRTIPSEILSMEDLGLPPIFKEMASFSRGLVLVTGPTGSGKSTTLAAVIDYINSSRY   152
NTDB id 1259 GC085 RS10305 WP 010947729.1       EIAN.LARFRVNAFNQSRGAAAVFRTIPSEILSMEDLGLPPIFKEMASFSRGLVLVTGPTGSGKSTTLAAVIDYINSSRY   152
NTDB id 1194 PAKAF RS01995 WP 003084552.1       EVPG.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEELGMGEVFKRVSDVPRGLVLVTGPTGSGKSTTLAAMLDYLNNTKY   152
NTDB id 1202 PSJM300 01600 AFN76400.1           EVPG.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEDLGMGEVFRKITDVPRGLVLVTGPTGSGKSTTLAAMLDYLNNTKY   152
NTDB id 1020 ACIAD RS04210 WP 011182164.1       EVPN.LARFRVNVFNQNRGAGAVFRTIPSQVLTLEELGLGKIFRDICDYPRGLVLVTGPTGSGKSTTLAAMLDYINNHRY   152
NTDB id 1081 FDQ49 RS05335 WP 006581387.1       EVPN.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEDLGLGQIFKDICDYPRGIVLVTGPTGSGKSTTLAAMLDYINENRY   152
NTDB id 1060 ABD1 RS04380 WP 000355489.1        EVPN.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEDLGLGQIFKDICDYPRGIVLVTGPTGSGKSTTLAAMLDYINENRY   152
NTDB id 1040 HON27 RS13360 WP 000355489.1       EVPN.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEDLGLGQIFKDICDYPRGIVLVTGPTGSGKSTTLAAMLDYINENRY   152
consensus                                       **   **!!!***!*! *****!*!*!************  *****    !!*****!*!!*!!*!**!******!  **

logo
NTDB id 1177 A1552VC RS01165 WP 000422572.1     GHILTVEDPIEFVHEHKRCIVTQREVGLDTESYEVALKNSLRQAPDMILIGEIRSRETMEYAMTFAETGHLCMATLHANN   230
NTDB id 1019 ACIAD RS04205 WP 004922051.1       GHIITIEDPIEFIHEHAGCIITQREVGIDTDSFEIALKNTLRQAPDVILIGEIRSREVMDYALAFAETGHLVFATLHANN   233
NTDB id 1067407 ACHFB9 RS01155 WP 417069145.1  GHIITLEDPIEYVHAHKNCVVTQREVGIDTDSWEAGLKNTLRQAPDVILMGEIRDRETMDYAVAFAETGHLCLATLHANS   239
NTDB id 1203 PSJM300 01605 AFN76401.1           GHIISIEDPIEFIHQHQNCIVTQREVGIDTDSFEVALKNTLRQAPDVILIGEVRTRETMDHAVAFAETGHLCLATLHANN   232
NTDB id 1307 DR RS10055 WP 010888596.1          LHILTIEDPIEFMHPNKASIINQREVGSDTLSFDDALRAALRQAPDVILVGEMRDYETIKAAVTAAETGHLVMGTLHTNS   236
NTDB id 1283 ACE17W RS02630 WP 010947729.1      EHILTVEDPIEFVHQSKKCLVNQREVHKDTLSFNAALRSALREDPDIILVGELRDLETIRLAMTAAETGHLVFGTLHTNS   232
NTDB id 1259 GC085 RS10305 WP 010947729.1       EHILTVEDPIEFVHQSKKCLVNQREVHKDTLSFNAALRSALREDPDIILVGELRDLETIRLAMTAAETGHLVFGTLHTNS   232
NTDB id 1194 PAKAF RS01995 WP 003084552.1       HHILTIEDPIEFVHESKKCLVNQREVHRDTLGFSEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTS   232
NTDB id 1202 PSJM300 01600 AFN76400.1           HHILTIEDPIEFVHESKKCLVNQREVHRDTLGFSEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTS   232
NTDB id 1020 ACIAD RS04210 WP 011182164.1       DHILTVEDPIEFVHEPKKCLINQREVHRDTLGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTS   232
NTDB id 1081 FDQ49 RS05335 WP 006581387.1       DHILTVEDPIEFVHQSKKCLINQREVHRDTHGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTS   232
NTDB id 1060 ABD1 RS04380 WP 000355489.1        DHILTVEDPIEFVHQSKKCLINQREVHRDTHGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTS   232
NTDB id 1040 HON27 RS13360 WP 000355489.1       DHILTVEDPIEFVHQSKKCLINQREVHRDTHGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTS   232
consensus                                        !!***!!!!!**!  ******!!!!**!!   *   *!***!!**!!*!!*!!*!**!****!***!!!!!!***!!!*  *
```

```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 1177 A1552VC RS01165 WP 000422572.1     ANQALERILHLVPKEQREQFLLDLSLNLKGVIAQQLLRDKNGKGRHGVFEVLLNSPRIADLIRRGELHELKATMARSQEV   310
NTDB id 1019 ACIAD RS04205 WP 004922051.1       ANQTLERIIHFFDADRHQQIFMDLSLNLKAVISQQLIPTHDGQSRRAAVEVLINTPLLSDYIRQGEIYKIKELMARSGEL   313
NTDB id 1067407 ACHFB9 RS01155 WP 417069145.1  ANQAIDRIINFFPEDRRQQLLMDLSLNLRGMVSQRLLPLKDRKGRVPAVEVLLNSPLIADLIFKGEIAEIKDLMKRSREL   319
NTDB id 1203 PSJM300 01605 AFN76401.1           ANQALDRIINFFPADRQNQVWMDLSLNLKAIVAQQLVPTPDGKGRRAVIEVLINTPLAADLIRKGEVHELKGLMKRSTDL   312
NTDB id 1307 DR RS10055 WP 010888596.1          APESIDRIVDVFPEEQQEQIRVQLANNLVAVMTQQLLPRADGQGRVLAYEILLANPAVRALIREGKTFQITSVMQTGARE   316
NTDB id 1283 ACE17W RS02630 WP 010947729.1      ATKTINRIIDVFPAEEKSMVRSMLSESLQAVVAQSLLK.KNKGGRVAALEIMMCTGAIRNLIREDKIAQMYSSIQTGQAK   311
NTDB id 1259 GCO85 RS10305 WP 010947729.1       ATKTINRIIDVFPAEEKSMVRSMLSESLQAVVAQSLLK.KNKGGRVAALEIMMCTGAIRNLIREDKIAQMYSSIQTGQAK   311
NTDB id 1194 PAKAF RS01995 WP 003084552.1       AAKTIDRVVDVFPAEEKAMVRSMLSESLQSVISQTLIK.KIGGGRVAAHEIMIGTPAIRNLIREDKVAQMYSAIQTGGSL   311
NTDB id 1202 PSJM300 01600 AFN76400.1           AAKTIDRVVDVFPAEEKSMVRSMLSESLQAVISQTLLK.KVGGGRVAAHEIMIGTPAIRNLIREDKVAQMYSSIQTGGSL   311
NTDB id 1020 ACIAD RS04210 WP 011182164.1       AAKTIDRIIDVFPAEEKDMVRTMLSESLQAVISQTLLK.KEGGGRVAAHEIMIGIPAIRNLIREGKVAQMYSSIQTGATH   311
NTDB id 1081 FDQ49 RS05335 WP 006581387.1       AAKTIDRVIDVFPAEEKDMVRAMLSESLQAVISQTLLK.KNGGGRVAAHEIMIGIPAIRNLIRENKVAQMYSAIQTGANH   311
NTDB id 1060 ABD1 RS04380 WP 000355489.1        AAKTIDRVIDVFPAEEKDMVRAMLSESLQAVISQTLLK.KNGGGRVAAHEIMIGIPAIRNLIRENKVAQMYSAIQTGANH   311
NTDB id 1040 HON27 RS13360 WP 000355489.1       AAKTIDRVIDVFPAEEKDMVRAMLSESLQAVISQTLLK.KNGGGRVAAHEIMIGIPAIRNLIRENKVAQMYSAIQTGANH   311
consensus                                       ! ****!*********** *** *!***!*****!*!** * ***!*** !*** *******!** ******* *****

logo

NTDB id 1177 A1552VC RS01165 WP 000422572.1     GMQTFDQALYQLVVDDKISEQDALHSADSANDLRLMLKT.KRGDD...YGSGS..LQNV.KIDME...............   368
NTDB id 1019 ACIAD RS04205 WP 004922051.1       GMQTFDQALFDLYDHQHISYADALKHADSPNNLRLQIKL.SEEANKPLDNRER..MSEM.ERKMTFDGQRRNLK......   383
NTDB id 1067407 ACHFB9 RS01155 WP 417069145.1  GMQTFDQSLFELYENELISYEDALRNADSINDLRLQIKL.NSRHSDRDLAA.G..IQNL.DIV.................   377
NTDB id 1203 PSJM300 01605 AFN76401.1           GMQTFDQALYNLYVQGEITYEDALLHADSSNDLRLMIKL.GSETDGEHLTS.V..SQGL.TLEMSDDDPGRSFR......   381
NTDB id 1307 DR RS10055 WP 010888596.1          GMVTMDAYLAGLFRRHLITYDKGLERAIDPKEFARLANDASAGLGGASMTPAAPPVPAYNSASSSSTGRGGDFGRGAAAP   396
NTDB id 1283 ACE17W RS02630 WP 010947729.1      GMQTLDQHLTELVNKNIISKHTAHEAALNKSLF.......................................   344
NTDB id 1259 GCO85 RS10305 WP 010947729.1       GMQTLDQHLTELVNKNIISKHTAHEAALNKSLF.......................................   344
NTDB id 1194 PAKAF RS01995 WP 003084552.1       GMQTLDMCLKGLVAKGLISRENAREKAKIPENF.......................................   344
NTDB id 1202 PSJM300 01600 AFN76400.1           GMQTLDSCLKGLLAKGLISRDSAKEKAKQPENF.......................................   344
NTDB id 1020 ACIAD RS04210 WP 011182164.1       GMTTLDQSLKQLLAKGIINLPTARAVAKSPESF.......................................   344
NTDB id 1081 FDQ49 RS05335 WP 006581387.1       GMTTLDQSLKGLVSRGVISPQTARTAAKQPESFL......................................   345
NTDB id 1060 ABD1 RS04380 WP 000355489.1        GMTTLDQSLKGLVARGVISPQTARTAAKQPESFL......................................   345
NTDB id 1040 HON27 RS13360 WP 000355489.1       GMTTLDQSLKGLVARGVISPQTARTAAKQPESFL......................................   345
consensus                                       !!*!*!* !  !* * *!*   *   !  *  *

logo

NTDB id 1177 A1552VC RS01165 WP 000422572.1     .......................   368
NTDB id 1019 ACIAD RS04205 WP 004922051.1       .......................   383
NTDB id 1067407 ACHFB9 RS01155 WP 417069145.1  .......................   377
NTDB id 1203 PSJM300 01605 AFN76401.1           .......................   381
NTDB id 1307 DR RS10055 WP 010888596.1          ATPAAPAAGRSEPGRAGGFGRR   418
NTDB id 1283 ACE17W RS02630 WP 010947729.1      .......................   344
NTDB id 1259 GCO85 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