

```
NTDB id 1177 A1552VC RS01165 WP 000422572.1  ....MELNQYLDGMLTHKASDLYITVGAPILYRVDGELRAQGEA.LSVADVTALLHAMMDDARQAEFKQTREANFAVVRD   75
NTDB id 1203 PSJM300 01605 AFN76401.1        ....MEFEKLLRLMVEKGGSDLFITAGVPPSMKVNGKILPVNKTPMSPEMTRETVHGVMNEQQRREFTENHECNFAISAR   76
NTDB id 45683 ACRAD RS11040 WP 005018931.1   ....MDFNDLLNLMMEQKASDLFITADVEPSMKINGQQIVPVSKNKLTGEIVGQLIHAIMTDKQRQEFADTRECNFAITNR   76
NTDB id 1019 ACIAD RS04205 WP 004922051.1    ....MDFNDLLNLMAKHKASDLFITAGVEPSLKINGEITPVSKTKLDGDMIAQLIDSITTQKQRQEFIETHECNFAILNR   76
NTDB id 1307 DR RS10055 WP 010888596.1       MTSGIDITDILRLAADKGASDIILAAGLPPQFKLSGDYDAQGFEPLSASDTRKLMYSMMNERQQRIFEEKRELDFSFALG   80
NTDB id 1116 NGFG RS10615 WP 003690200.1     ....MQITDLLAFGAKNKASDLHLSSGISPMIRVHGDMRRINLPEMSAEEVGNMVTSVMNDHQRKIYQQNLEVDFSFELP   76
NTDB id 1086 NMV RS00245 WP 002218487.1      ....MQITDLLAFGAKNKASDLHLSSGISPMIRVHGDMRRINLPEMSAEEVGNMVTSVMNDHQRKIYQQNLEVDFSFELP   76
NTDB id 1283 ACE17W RS02630 WP 010947729.1   ....MDIAELLAFSVKNKSSDLHISAGMPPMIRVDGDLRKINLPPLEHKDVIKIIYDIMNDRQRKEYEEFFETDFSFEIA   76
NTDB id 1259 GCO85 RS10305 WP 010947729.1    ....MDIAELLAFSVKNKSSDLHISAGMPPMIRVDGDLRKINLPPLEHKDVIKIIYDIMNDRQRKEYEEFFETDFSFEIA   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 1194 PA0395 NP 249086.1              ....MDITELLAFSAKQGASDLHLSAGLPPMIRVDGDVRRINLPPLEHKQVHALIYDIMNDKQRKDFEEFLETDFSFEVP   76
NTDB id 1202 PSJM300 01600 AFN76400.1        ....MDITELLAFSAKQGASDLHLSSGLPPMIRVDGDVRRINLPAMDHKQVHALIYDIMNDKQRKDFEEFLETDFSFEVP   76
consensus                                      ******!**  ***  *!!*****************!********  **   **   ***  **********   !  *!****
```



```
NTDB id 1177 A1552VC RS01165 WP 000422572.1  ..SGRFRVSAFFQRELPGAVIRRIETRIPTFEELKLPEVLQNLAIAKRGLVLVVGATGSGKSTTMAAMTGYRNQHRTGHI  153
NTDB id 1203 PSJM300 01605 AFN76401.1        G.IGRFRVSAFYQRNLAGMVLRRIETNIPTIEDLKLPDVLKKLALTKRGLVLFVGATGTGKSTSLAAMIGYRNKNSSGHI  155
NTDB id 45683 ACRAD RS11040 WP 005018931.1   EKTARFRVSAFQQRDLPGMILRRIETQIPTMDDLKLPQVLKELAMTKRGIIIFVGATGTGKSTSLASMIGYRNHNSKGHI  156
NTDB id 1019 ACIAD RS04205 WP 004922051.1    EKNERFRVSAFQQRDMPGMVIRRIETKIPSPDDLHLPPILKELAMSKRGIIIFSGATGTGKSTSLASMIQHRNQHSKGHI  156
NTDB id 1307 DR RS10055 WP 010888596.1       D.KARFRVNAFMQRGNVGGVMRLIPTTVRTIAEMGLPQTVIDIANAPRGLVLVTGPTGSGKSTTLASMIDHINTTKKLHI  159
NTDB id 1116 NGFG RS10615 WP 003690200.1     N.VARFRVNAFNTGRGPAAVFRTIPSTVLSLEELKAPSIFQKIAESPRGMVLVTGPTGSGKSTTLAAMINYINETQPAHI  155
NTDB id 1086 NMV RS00245 WP 002218487.1      N.VARFRVNAFNIGRGPAAVFRTIPSTVLSLEELKAPSIFQKIAESPRGMVLVTGPTGSGKSTTLAAMINYINETQPAHI  155
NTDB id 1283 ACE17W RS02630 WP 010947729.1   N.LARFRVNAFNQSRGAAAVFRTIPSEILSMEDLGLPPIFKEMASFSRGLVLVTGPTGSGKSTTLAAVIDYINSSRYEHI  155
NTDB id 1259 GCO85 RS10305 WP 010947729.1    N.LARFRVNAFNQSRGAAAVFRTIPSEILSMEDLGLPPIFKEMASFSRGLVLVTGPTGSGKSTTLAAVIDYINSSRYEHI  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 1194 PA0395 NP 249086.1              G.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEELGMGEVFKRVSDVPRGLVLVTGPTGSGKSTTLAAMLDYLNNTKYHHI  155
NTDB id 1202 PSJM300 01600 AFN76400.1        G.VARFRVNAFNQNRGAGAVFRTIPSKVLTMEDLGMGEVFRKITDVPRGLVLVTGPTGSGKSTTLAAMLDYLNNTKYHHI  155
consensus                                      **!!!!*!!**  *******!*!**  **********  ******   *!!*****!*!!*!!!!**!******!   *   !!
```



```
NTDB id 1177 A1552VC RS01165 WP 000422572.1  LTVEDPIEFVHEHKRCIVTQREVGLDTESYEVALKNSLRQAPDMILIGEIRSRETMEYAMTFAETGHLCMATLHANNANQ  233
NTDB id 1203 PSJM300 01605 AFN76401.1        ISIEDPIEFIHQHQNCIVTQREVGIDTDSFEVALKNTLRQAPDVILIGEVRTRETMDHAVAFAETGHLCLATLHANNANQ  235
NTDB id 45683 ACRAD RS11040 WP 005018931.1   ITIEDPIEFVHEHAGCIITQREVGIDTASFEIALKNTLRQAPDVILIGEIRSRETMDYAIAFAETGHLVLATLHANNANQ  236
NTDB id 1019 ACIAD RS04205 WP 004922051.1    ITIEDPIEFIHEHAGCIITQREVGIDTDSFEIALKNTLRQAPDVILIGEIRSREVMDYALAFAETGHLVFATLHANNANQ  236
NTDB id 1307 DR RS10055 WP 010888596.1       LTIEDPIEFMHPNKASIINQREVGSDTLSFDDALRAALRQAPDVILVGEMRDYETIKAAVTAAETGHLVMGTLHTNSAPE  239
NTDB id 1116 NGFG RS10615 WP 003690200.1     LTIEDPIEFVHQSKKSLINQRELHQHTLSFANALSSALREDPDVILVGEMRDPETIGLALTAAETGHLVFGTLHTTGAAK  235
NTDB id 1086 NMV RS00245 WP 002218487.1      LTIEDPIEFVHQSKKSLINQRELHQHTLSFANALRSALREDPDVILVGEMRDPETIGLALTAAETGHLVFGTLHTTGAAK  235
NTDB id 1283 ACE17W RS02630 WP 010947729.1   LTVEDPIEFVHQSKKCLVNQREVHKDTLSFNAALRSALREDPDIILVGELRDLETIRLAMTAAETGHLVFGTLHTNSATK  235
NTDB id 1259 GCO85 RS10305 WP 010947729.1    LTVEDPIEFVHQSKKCLVNQREVHKDTLSFNAALRSALREDPDIILVGELRDLETIRLAMTAAETGHLVFGTLHTNSATK  235
NTDB id 1081 FDQ49 RS05335 WP 006581387.1    LTVEDPIEFVHQSKKCLINQREVHRDTHGFNEALRSALREDPDIILVGEMRDLETIRLAMTAAETGHLVFGTLHTTSAAK  235
NTDB id 1060 ABD1 RS04380 WP 000355489.1     LTVEDPIEFVHQSKKCLINQREVHRDTHGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTSAAK  235
NTDB id 1040 HON27 RS13360 WP 000355489.1    LTVEDPIEFVHQSKKCLINQREVHRDTHGFNEALRSALREDPDIILVGEMRDLETIRLALTAAETGHLVFGTLHTTSAAK  235
NTDB id 1194 PA0395 NP 249086.1              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 45683 ACRAD RS11040 WP 005018931.1   ALDRIVHFFEADRHSQLYMDLSLNLKAVIAQQLIPTLDGNGRRAAIEVLINTPLLADYIRKGEVHEIKDLMKRSRELGMQ  316
NTDB id 1019 ACIAD RS04205 WP 004922051.1    TLERIIHFFDADRHQQIFMDLSLNLKAVISQQLIPTHDGQSRRAAVEVLINTPLLSDYIRQGEIYKIKELMARSGELGMQ  316
NTDB id 1307 DR RS10055 WP 010888596.1       SIDRIVDVFPEEQQEQIRVQLANNLVAVMTQQLLPRADGQGRVLAYEILLANPAVRALIREGKTFQITSVMQTGAREGMV  319
NTDB id 1116 NGFG RS10615 WP 003690200.1     TVDRIVDVFPAGEKEMVRSMLSESLTAVISQNLLKTHDGNGRVASHEILIANPAVRNLIRENKITQINSVLQTGQASGMQ  315
NTDB id 1086 NMV RS00245 WP 002218487.1      TVDRIVDVFPAGEKEMVRSMLSESLTAVISQNLLKTHDGNGRVASHEILIANPAVRNLIRENKITQINSVLQTGQASGMQ  315
NTDB id 1283 ACE17W RS02630 WP 010947729.1   TINRIIDVFPAEEKSMVRSMLSESLQAVVAQSLLKK.NKGGRVAALEIMMCTGAIRNLIREDKIAQMYSSIQTGQAKGMQ  314
NTDB id 1259 GCO85 RS10305 WP 010947729.1    TINRIIDVFPAEEKSMVRSMLSESLQAVVAQSLLKK.NKGGRVAALEIMMCTGAIRNLIREDKIAQMYSSIQTGQAKGMQ  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 HON27 RS13360 WP 000355489.1    TIDRVIDVFPAEEKDMVRAMLSESLQAVISQTLLKK.NGGGRVAAHEIMIGIPAIRNLIRENKVAQMYSAIQTGANHGMT  314
NTDB id 1194 PA0395 NP 249086.1              TIDRVVDVFPAEEKAMVRSMLSESLQSVISQTLIKK.IGGGRVAAHEIMIGTPAIRNLIREDKVAQMYSAIQTGGSLGMQ  314
NTDB id 1202 PSJM300 01600 AFN76400.1        TIDRVVDVFPAEEKSMVRSMLSESLQAVISQTLLKK.VGGGRVAAHEIMIGTPAIRNLIREDKVAQMYSSIQTGGSLGMQ  314
consensus                                    ***!*********** *** *!***! *****! !***   * *!*** !*************!!* ** ** * ****    !!*
```

logo



```
NTDB id 1177 A1552VC RS01165 WP 000422572.1  TFDQALYQLVVDDKISEQDALHSADSANDLRLMLKTKRGDDYGS.G...SLQNV...KIDME.....................  368
NTDB id 1203 PSJM300 01605 AFN76401.1        TFDQALYNLYVQGEITYEDALLHADSSNDLRLMIKLGSETDGEH.LTSVSQ.GL...TLEMSDDDPGRSFR.........  381
NTDB id 45683 ACRAD RS11040 WP 005018931.1   TFDQALYDLYKAGQISYKDALKHADAPNDLRLQIKLSEEGASQL.M......AA...GRNITFDGQ..............  372
NTDB id 1019 ACIAD RS04205 WP 004922051.1    TFDQALFDLYDHQHISYADALKHADSPNNLRLQIKLSEEANKPL.DNRERMSEM...ERKMTFDGQRRNLK.........  383
NTDB id 1307 DR RS10055 WP 010888596.1       TMDAYLAGLFRRHLITYDKGLERAIDPKEFARLANDASAGLGGASMTPAAPPVPAYNSASSSSTGRGGDFGRGAAAPATP  399
NTDB id 1116 NGFG RS10615 WP 003690200.1     TMDQSLQSLVRQGLIAPEAARRRAQNSESMSF.....................................................  347
NTDB id 1086 NMV RS00245 WP 002218487.1      TMDQSLQSLVRQGLIAPEVARRRAQNSESMSF.....................................................  347
NTDB id 1283 ACE17W RS02630 WP 010947729.1   TLDQHLTELVNKNIISKHTAHEAALNKSLF........................................................  344
NTDB id 1259 GCO85 RS10305 WP 010947729.1    TLDQHLTELVNKNIISKHTAHEAALNKSLF........................................................  344
NTDB id 1081 FDQ49 RS05335 WP 006581387.1    TLDQSLKGLVSRGVISPQTARTAAKQPESFL.......................................................  345
NTDB id 1060 ABD1 RS04380 WP 000355489.1     TLDQSLKGLVARGVISPQTARTAAKQPESFL.......................................................  345
NTDB id 1040 HON27 RS13360 WP 000355489.1    TLDQSLKGLVARGVISPQTARTAAKQPESFL.......................................................  345
NTDB id 1194 PA0395 NP 249086.1              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 45683 ACRAD RS11040 WP 005018931.1   ....................  372
NTDB id 1019 ACIAD RS04205 WP 004922051.1    ....................  383
NTDB id 1307 DR RS10055 WP 010888596.1       AAPAAGRSEPGRAGGFGRR  418
NTDB id 1116 NGFG RS10615 WP 003690200.1     ....................  347
NTDB id 1086 NMV RS00245 WP 002218487.1      ....................  347
NTDB id 1283 ACE17W RS02630 WP 010947729.1   ....................  344
NTDB id 1259 GCO85 RS10305 WP 010947729.1    ....................  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
NTDB id 1194 PA0395 NP 249086.1              ....................  344
NTDB id 1202 PSJM300 01600 AFN76400.1        ....................  344
consensus
```

X non conserved

X similar

X $\geq$ 50% conserved