```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 358 SMU RS01425 WP 002263523.1      MKQVIYVVLIVIAVNILLEIIKRVTKRGGTVSSSNPLPDGQSKLFWRRHYKLVPQIDTRDCGPAVLASVAKHYGSNYSIAYLREL   85
NTDB id 421 SGO RS10260 WP 012131060.1      ..........................................MKFRKQHY..RAQVDTRDCGVAALAMIFGYYGSYFSLATLREK   41
NTDB id 33482 SZO RS07685 WP 012678371.1    ..........................................MKFRRKHY..RAQVDTRDCGVASLAMIYGYYGSYYSLATLREA   41
NTDB id 483 SM12261 RS00275 WP 000668315.1  ..........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYSLAHLREL   41
NTDB id 511 SMSK321 RS10730 WP 000668322.1  ..........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYSLAHLREL   41
NTDB id 247 KZH43 RS00220 WP 000668290.1    ..........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYFLAHLREL   41
NTDB id 206 SPD RS00235 WP 000668290.1      ..........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYFLAHLREL   41
NTDB id 171 SPR RS00230 WP 000668290.1      ..........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYFLAHLREL   41
NTDB id 131 SP RS00255 WP 000668284.1       ..........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYFLAHLREL   41
consensus                                                                             **!***!!  **!*!**!!!*!*!!*****!!!*****!*!!!*

logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 358 SMU RS01425 WP 002263523.1      SKTNKQGTTALGIVEAAKKLGFETRSIKADMTLFDYNDLTYPFIVHVIKGKRLQHYYVVYGSQNNQLIIGDPDPSVKVTRMSKER  170
NTDB id 421 SGO RS10260 WP 012131060.1      AKTTNDGTTALGLVKVAEGLNFETRAFKADMSLFDLEEVSYPFIAHILKDGKLLHYYVVTGQDKHTIHIADPDPQVKMTKISRER  126
NTDB id 33482 SZO RS07685 WP 012678371.1    AKTTQEGTTAFGLVKVSEALGFETRAIRADMSLFDVEGLSYPFIAHVLKKGKFLHYYVVTGQDKKYIHIADPDPTVKLTCLSRQR  126
NTDB id 483 SM12261 RS00275 WP 000668315.1  AKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKDSIHIADPDPGVKLTKLPRER  126
NTDB id 511 SMSK321 RS10730 WP 000668322.1  AKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKGSIHIADPDPGVKLTKLPRER  126
NTDB id 247 KZH43 RS00220 WP 000668290.1    AKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKDSIHIADPDPGVKLTKLPRER  126
NTDB id 206 SPD RS00235 WP 000668290.1      AKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKDSIHIADPDPGVKLTKLPRER  126
NTDB id 171 SPR RS00230 WP 000668290.1      AKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKDSIHIADPDPGVKLTKLPRER  126
NTDB id 131 SP RS00255 WP 000668284.1       AKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKDSIHIADPDPGVKLTKLPRER  126
consensus                                   *!!***!!!!*!*!*******!!!!***!!!*!!!******!!**!**!*****!!!!!*!*******!*!!!!*!!*!******!

logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 358 SMU RS01425 WP 002263523.1      FQSEWTGLAIFLAPQPNYKPHKGEKNGLSNFFPLIFKQKALMTYIIIASLIVTLIDIVGSYYLQGILDEYIPDQLISTLGMITIG  255
NTDB id 421 SGO RS10260 WP 012131060.1      FEQEWTGITIFLAPSPAYKPSQEKKNGLLDFIPLLIKQKGLITNIVLATLLVTLINIVGSYYLQSIIDTYVPDHMKTTLGMISIG  211
NTDB id 33482 SZO RS07685 WP 012678371.1    FASEWTGVTIFIAPTPEYKPHKEKKNSLLDFVPLLAKQKGLITNIVVATLLVMIINIIGSYYLQSIIDTYVPSVMKNTLGIISVG  211
NTDB id 483 SM12261 RS00275 WP 000668315.1  FAEEWTGVTLFMAPSPDYKPHKDQKNGLLSFIPILVKQRGLIANIVLATLLVTLINIVGSYYLQSIIDTYVPDQMRSTLGIISIG  211
NTDB id 511 SMSK321 RS10730 WP 000668322.1  FAEEWTGVTLFMAPSPDYKPHKDQKNGLLSFIPILVKQRGLIANIVLATLLVTVINIVGSYYLQSIIDTYVPDQMRSTLGIISIG  211
NTDB id 247 KZH43 RS00220 WP 000668290.1    FEEEWTGVTLFMAPSPDYKPHKEQKNGLLSFIPILVKQRGLIANIVLATLLVTVINIVGSYYLQSIIDTYVPDQMRSTLGIISIG  211
NTDB id 206 SPD RS00235 WP 000668290.1      FEEEWTGVTLFMAPSPDYKPHKEQKNGLLSFIPILVKQRGLIANIVLATLLVTVINIVGSYYLQSIIDTYVPDQMRSTLGIISIG  211
NTDB id 171 SPR RS00230 WP 000668290.1      FEEEWTGVTLFMAPSPDYKPHKEQKNGLLSFIPILVKQRGLIANIVLATLLVTVINIVGSYYLQSIIDTYVPDQMRSTLGIISIG  211
NTDB id 131 SP RS00255 WP 000668284.1       FEEEWTGVTLFMAPSPDYKPHKEQKNGLLSFIPILVKQRGLIANIVLATLLVTVINIVGSYYLQSIIDTYVPDQMRSTLGIISIG  211
consensus                                   !**!!!!***!*!!*!*!!!****!!*!**!*!***!!**!***!**!*!*!**!*!*!!!!!!*!*!*!*!*****!!!*!**!

logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 358 SMU RS01425 WP 002263523.1      LIITYIIQQVMAFAKEYLLAVLSLRLVIDVILSYIKHIFTLPMSFFATRRTGEITSRFTDANQIIDAVASTIFSIFLDMTMVILV  340
NTDB id 421 SGO RS10260 WP 012131060.1      LIIVYILQQFLSYAQEYLLLVLGQRLSIDVILSYIKHVFQLPMSFFATRRTGEIVSRFTDANRIIDALASTILSIFLDVSIVSII  296
NTDB id 33482 SZO RS07685 WP 012678371.1    LVIVYALQQVISYAQEYLLLILGQRLSIDVILSYIKHIFNLPMSFFATRRTGEIVSRFNDANSIIDALASTILSIFLDVSVIVII  296
NTDB id 483 SM12261 RS00275 WP 000668315.1  LVIVYILQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSIIDALASTILSIFLDVSTVVII  296
NTDB id 511 SMSK321 RS10730 WP 000668322.1  LVIVYILQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSIIDALASTILSIFLDVSTVVII  296
NTDB id 247 KZH43 RS00220 WP 000668290.1    LVIVYILQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSIIDALASTILSIFLDVSTVVII  296
NTDB id 206 SPD RS00235 WP 000668290.1      LVIVYILQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSIIDALASTILSIFLDVSTVVII  296
NTDB id 171 SPR RS00230 WP 000668290.1      LVIVYILQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSIIDALASTILSIFLDVSTVVII  296
NTDB id 131 SP RS00255 WP 000668284.1       LVIVYIFQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSIIDALASTILSIFLDVSTVVII  296
consensus                                   !*!*!**!!****!*!!!!**!**!!*!!!!!!!!!!*!*!!!!!!!!!!!!!!!!*!!!*!!!*!!!!*!!!!*!!!!!*******
```

```
logo
NTDB id 358 SMU RS01425 WP 002263523.1        GGVLLAQNNNLFFLTLLSIPIYAIIIFAFLKPFEKMNHEVMESNAVVSSSIIEDINGMETIKSLTSESARYQNIDSEFVDYLEKN   425
NTDB id 421 SGO RS10260 WP 012131060.1        AIVLFSQNSSLFFLTLLGIPVYALIIFLFMKPFEKMNHETMEANSLLSSSIIEDINGIETIKSLTSEKQRYQKIDKEFVTYLKKS   381
NTDB id 33482 SZO RS07685 WP 012678371.1      SLVLFSQNVNLFVISLLALPIYAVIIFAFMKPFERMNQETMEANSIMSSSIIEDINGIETIKSLTSEKIRYQKIDKEFVAYLKKS   381
NTDB id 483 SM12261 RS00275 WP 000668315.1    SLVLFSQNTNLFFITLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIETIKSLTSESQRYQKIDKEFVDYLKKS   381
NTDB id 511 SMSK321 RS10730 WP 000668322.1    SLVLFSQNTNLFFMTLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIETIKSLTSESQRYQKIDKEFVDYLKKS   381
NTDB id 247 KZH43 RS00220 WP 000668290.1      SLVLFSQNTNLFFMTLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIETIKSLTSESQRYQKIDKEFVDYLKKS   381
NTDB id 206 SPD RS00235 WP 000668290.1        SLVLFSQNTNLFFMTLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIETIKSLTSESQRYQKIDKEFVDYLKKS   381
NTDB id 171 SPR RS00230 WP 000668290.1        SLVLFSQNTNLFFMTLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIETIKSLTSESQRYQKIDKEFVDYLKKS   381
NTDB id 131 SP RS00255 WP 000668284.1         SLVLFSQNTNLFFMTLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIETIKSLTSESQRYQKIDKEFVDYLKKS   381
consensus                                     **!!**!!**!!***!!**!*!**!!!*!*!!!!*!!***!!*!***!!!!!!!!!!*!!!!!!!!!!**!!!*!!*!!!*!!*!*

logo
NTDB id 358 SMU RS01425 WP 002263523.1        FKLHKYSAIQTALKSGAKLILNVVILWYGSRLVMDNKISVGQLITRNALLSYFSNPIENIINLQSKLQSARVANTRLNEVYLVES   510
NTDB id 421 SGO RS10260 WP 012131060.1        FAYGRSESLQKVLKAAARLILNVLILWLGATLVMDQKISLGQLITYNTLLVYFTNPLENIINLQTKLQSARVANERLNEVYLVKS   466
NTDB id 33482 SZO RS07685 WP 012678371.1      FNYSRAESQQRALKKVAQLILNVSILWIGANLVMDGKMSLGQLITYNSLLIYFTNPLENIINLQTKLQTAQVANNRLNEVYLVES   466
NTDB id 483 SM12261 RS00275 WP 000668315.1    FTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTNPLENIINLQTKLQTAQVANNRLNEVYLVAS   466
NTDB id 511 SMSK321 RS10730 WP 000668322.1    FTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTNPLENIINLQTKLQTAQVANNRLNEVYLVTS   466
NTDB id 247 KZH43 RS00220 WP 000668290.1      FTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTNPLENIINLQTKLQTAQVANNRLNEVYLVAS   466
NTDB id 206 SPD RS00235 WP 000668290.1        FTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTNPLENIINLQTKLQTAQVANNRLNEVYLVAS   466
NTDB id 171 SPR RS00230 WP 000668290.1        FTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTNPLENIINLQTKLQTAQVANNRLNEVYLVAS   466
NTDB id 131 SP RS00255 WP 000668284.1         FTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTNPLENIINLQTKLQTAQVANNRLNEVYLVAS   466
consensus                                     !********!**!!**!*!*!!!*!!!*!**!!!!*!*!*!!!!!*!*!!*!!*!!*!!!!!!!*!!!*!*!!!*!!!!!!!!*!

logo
NTDB id 358 SMU RS01425 WP 002263523.1        EFEKDGDLSENSFLDGDISFENLSYKYGFGRDTLSDINLSIKKGSKVSLVGASGSGKTTLAKLIVNFYEPNKGIVRINGNDLKVI   595
NTDB id 421 SGO RS10260 WP 012131060.1        EFEEKKLIKDLSHFQADIDFRGVSYKYGYGANVLSEIDLHIPAGSKTSFVGVSGSGKTTLAKMMVHFYAPNQGDICLGGVNLNQL   551
NTDB id 33482 SZO RS07685 WP 012678371.1      EFSEKKNVQDLSLTSGDIKFNDVSYRYGYGKDVLSEINLHIKRGSKVAFVGISGSGKTTLAKMIVSFFEPSKGEISLNNVNLNQI   551
NTDB id 483 SM12261 RS00275 WP 000668315.1    EFEEKKTVEDLSLMKGDMTFKQVSYKYGYGRDVLLDINLTIPQGSKVAFVGISGSGKTTLAKMMVNFYDPSQGEISLGGVNLNQI   551
NTDB id 511 SMSK321 RS10730 WP 000668322.1    EFEEKKTVEDLSLMKGEMTFKQVYYKYGYGRDVLSDINLTIPQGSKVAFVGISGSGKTTLAKMMVNFYDPSQGEISLGGVNLNQI   551
NTDB id 247 KZH43 RS00220 WP 000668290.1      EFEEKKTVEDLSLMKGDMTFKQVHYKYGYGRDVLSDINLTVPQGSKVAFVGISGSGKTTLAKMMVNFYDPSQGEISLGGVNLNQI   551
NTDB id 206 SPD RS00235 WP 000668290.1        EFEEKKTVEDLSLMKGDMTFKQVHYKYGYGRDVLSDINLTVPQGSKVAFVGISGSGKTTLAKMMVNFYDPSQGEISLGGVNLNQI   551
NTDB id 171 SPR RS00230 WP 000668290.1        EFEEKKTVEDLSLMKGDMTFKQVHYKYGYGRDVLSDINLTVPQGSKVAFVGISGSGKTTLAKMMVNFYDPSQGEISLGGVNLNQI   551
NTDB id 131 SP RS00255 WP 000668284.1         EFEEKKTVEDLSLMKGDMTFKQVHYKYGYGRDVLSDINLTVPQGSKVAFVGISGSGKTTLAKMMVNFYDPSQGEISLGSVNLNQI   551
consensus                                     !!*********!*******!***  !*!!*!***!**!*!****!!!***!!*!!!!!!!!!!**!*!**!**!********!***

logo
NTDB id 358 SMU RS01425 WP 002263523.1        DKTALRRHISYLPQQAYVFSGSIMDNLVLGAKEGTSQEDIIRACEIAEIRSDIEQMPQGYQTEL.SDGAGISGGQKQRIALARAL   679
NTDB id 421 SGO RS10260 WP 012131060.1        DKQALRQYINYLPQQPYVFNGTILENLLLGAREGTTQEDIRAVELAEIRSDIERMPLNYQTELSADGAGISGGQRQRIALARAL   636
NTDB id 33482 SZO RS07685 WP 012678371.1      DKHALRQHINYLPQQPYVFNGTILENLLLGAREGTTQEDIMKAVELAEIKSDIERMPLNYQTELTSDGAGISGGQRQRIALARAL   636
NTDB id 483 SM12261 RS00275 WP 000668315.1    DKKALRQYINYLPQQPYVFNGTILDNLLLGAKEGTTQEDILRAVELAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALARAL   636
NTDB id 511 SMSK321 RS10730 WP 000668322.1    DKKALRQYINYLPQQPYVFNGTILENLLLGAKEGTTQEDILRAVELAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALARAL   636
NTDB id 247 KZH43 RS00220 WP 000668290.1      DKKALRQYINYLPQQPYVFNGTILENLLLGAKEGTTQEDILRAVELAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALARAL   636
NTDB id 206 SPD RS00235 WP 000668290.1        DKKALRQYINYLPQQPYVFNGTILENLLLGAKEGTTQEDILRAVELAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALARAL   636
NTDB id 171 SPR RS00230 WP 000668290.1        DKKALRQYINYLPQQPYVFNGTILENLLLGAKEGTTQEDILRAVELAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALARAL   636
NTDB id 131 SP RS00255 WP 000668284.1         DKKALRQYINYLSQQPYVFNGTILENLLLGAKEGTTQEDILRAVELAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALARAL   636
consensus                                     !!*!!!**!*!!*!!*!!!*!*!**!!*!!!*!!*!!!!**!*!*!!!**!!!*!!**!!!!!**!!!!!!!!!*!!!!!!!!!
```

```
logo
NTDB id 358 SMU RS01425 WP 002263523.1      LTQAPVLILDEATSSLDILTEKKIISNLLQMTEKTIIFVAHRLSISQRTDEVIVMDQGKIVEQGTHKELLAKQGFYYNLFN.   760
NTDB id 421 SGO RS10260 WP 012131060.1      LTDAPVLILDEATSSLDILTEKRIIDNLMVL.DKTIIFIAHRLTIAERSEQVVVLDQGRIVESGSHKELIEREGFYHHLVNS   717
NTDB id 33482 SZO RS07685 WP 012678371.1    LTDSPVLILDEATSNLDILTEKRIVDNLMAL.DKTLIFIAHRLTIAERTEHVVVLDKGKIIEQGTHRDLVSQNGFYAHLVNS   717
NTDB id 483 SM12261 RS00275 WP 000668315.1 LTDAPVLILDEATSSLDILTEKRIVDNLMAL.DKTLIFIAHRLTIAERTEKVVVLDQGKIVEEGNHADLLAQGGFYAHLVNS   717
NTDB id 511 SMSK321 RS10730 WP 000668322.1 LTDAPILILDEATSSLDILTEKRIVDNLMAL.DKTLIFIAHRLTIAERTEKVVVLNQGKIVEEGKHADLLAQGGFYAHLVNS   717
NTDB id 247 KZH43 RS00220 WP 000668290.1   LTDAPVLILDEATSSLDILTEKRIVDNLIAL.DKTLIFIAHRLTIAERTEKVVVLDQGKIVEEGKHADLLAQGGFYAHLVNS   717
NTDB id 206 SPD RS00235 WP 000668290.1     LTDAPVLILDEATSSLDILTEKRIVDNLIAL.DKTLIFIAHRLTIAERTEKVVVLDQGKIVEEGKHADLLAQGGFYAHLVNS   717
NTDB id 171 SPR RS00230 WP 000668290.1     LTDAPVLILDEATSSLDILTEKRIVDNLIAL.DKTLIFIAHRLTIAERTEKVVVLDQGKIVEEGKHADLLAQGGFYAHLVNS   717
NTDB id 131 SP RS00255 WP 000668284.1      LTDAPVLILDEATSSLDILTEKRIVDNLIAL.DKTLIFIAHRLTIAERTEKVVVLDQGKIVEEGKHADLLAQGGFYAHLVNS   717
consensus                                  !!**!*!!!!!!!!*!!!!!!!*!**!!*** *!!*!!*!!!!*!**!***!*!***!*!*!*!*!**!****!!!**!*!*
```

X non conserved

X similar

X $\geq$ 50% conserved