```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 151853 LPL9 RS12110 WP 003585566.1   ..............................MIKYNLKLGQ.AQYYKRYY..TPQVDERDCGVAALNMLLQFNGSDYSLAHLRQL   51
NTDB id 358 SMU RS01425 WP 002263523.1       MKQVIYVVLIVIAVNILLEIIKRVTKRGGTVSSSNPLPDGQSKLFWRRHYKLVPQIDTRDCGPAVLASVAKHYGSNYSIAYLREL   85
NTDB id 421 SGO RS10260 WP 012131060.1       ..........................................MKFRKQHY..RAQVDTRDCGVAALAMIFGYYGSYFSLATLREK   41
NTDB id 511 SMSK321 RS10730 WP 000668322.1   ..........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYSLAHLREL   41
NTDB id 483 SM12261 RS00275 WP 000668315.1   ..........................................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 151853 LPL9 RS12110 WP 003585566.1   AKTDQEGTTALGIVRAAQALHFETKAVKADMTLFDLDDVPYPFLVHVLKRGELLHYYVVFKATKDHILIGDPDPSVAMTWLPKER  136
NTDB id 358 SMU RS01425 WP 002263523.1       SKTNKQGTTALGIVEAAKKLGFETRSIKADMTLFDYNDLTYPFIVHVIKGKRLQHYYVVYGSQNNQLIIGDPDPSVKVTRMSKER  170
NTDB id 421 SGO RS10260 WP 012131060.1       AKTTNDGTTALGLVKVAEGLNFETRAFKADMSLFDLEEVSYPFIAHILKDGKLLHYYVVTGQDKHTIHIADPDPQVKMTKISRER  126
NTDB id 511 SMSK321 RS10730 WP 000668322.1   AKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKGSIHIADPDPGVKLTKLPRER  126
NTDB id 483 SM12261 RS00275 WP 000668315.1   AKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKDSIHIADPDPGVKLTKLPRER  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 151853 LPL9 RS12110 WP 003585566.1   FAKEWSGVAIFIAPEPQYQPRKEDKGSLFAFVPILARQKGIIANIIVAAVLITLISIVGSYFLQSIIDTYIPNGMRTTLGMIASG  221
NTDB id 358 SMU RS01425 WP 002263523.1       FQSEWTGLAIFLAPQPNYKPHKGEKNGLSNFFPLIFKQKALMTYIIIASLIVTLIDIVGSYYLQGILDEYIPDQLISTLGMITIG  255
NTDB id 421 SGO RS10260 WP 012131060.1       FEQEWTGITIFLAPSPAYKPSQEKKNGLLDFIPLLIKQKGLITNIVLATLLVTLINIVGSYYLQSIIDTYVPDHMKTTLGMISIG  211
NTDB id 511 SMSK321 RS10730 WP 000668322.1   FAEEWTGVTLFMAPSPDYKPHKDQKNGLLSFIPILVKQRGLIANIVLATLLVTVINIVGSYYLQSIIDTYVPDQMRSTLGIISIG  211
NTDB id 483 SM12261 RS00275 WP 000668315.1   FAEEWTGVTLFMAPSPDYKPHKDQKNGLLSFIPILVKQRGLIANIVLATLLVTLINIVGSYYLQSIIDTYVPDQMRSTLGIISIG  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 151853 LPL9 RS12110 WP 003585566.1   LILAYVLQSVLTYGQNFLMAVLGQRLSIDVILGYVRHLYELPMSFFSTRRTGEIVSRFSDANKIIDALANTIMTLFLDIWIVLIL  306
NTDB id 358 SMU RS01425 WP 002263523.1       LIITYIIQQVMAFAKEYLLAVLSLRLVIDVILSYIKHIFTLPMSFFATRRTGEITSRFTDANQIIDAVASTIFSIFLDMIMVILV  340
NTDB id 421 SGO RS10260 WP 012131060.1       LIIVYILQQFLSYAQEYLLLVLGQRLSIDVILSYIKHVFQLPMSFFATRRTGEIVSRFTDANRIIDALASTILSIFLDVSIVSII  296
NTDB id 511 SMSK321 RS10730 WP 000668322.1   LVIVYILQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSIIDALASTILSIFLDVSTVVII  296
NTDB id 483 SM12261 RS00275 WP 000668315.1   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 151853 LPL9 RS12110 WP 003585566.1   GIVLGIQNTTLFLVSLIAVPCYLVIVFAFQRPFNRLNQETMESNAILSSSIIEDLNGIETIKSLTGEKVSYERVDREFVTYLKKS   391
NTDB id 358 SMU RS01425 WP 002263523.1       GGVLLAQNNNLFFLTLLSIPIYAIIIFAFLKPFEKMNHEVMESNAVVSSSIIEDINGMETIKSLTSESARYQNIDSEFVDYLEKN   425
NTDB id 421 SGO RS10260 WP 012131060.1       AIVLFSQNSSLFFLTLLGIPVYALIIFLFMKPFEKMNHETMEANSLLSSSIIEDINGIETIKSLTSEKQRYQKIDKEFVTYLKKS   381
NTDB id 511 SMSK321 RS10730 WP 000668322.1   SLVLFSQNTNLFFMTLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIETIKSLTSESQRYQKIDKEFVDYLKKS   381
NTDB id 483 SM12261 RS00275 WP 000668315.1   SLVLFSQNTNLFFITLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIETIKSLTSESQRYQKIDKEFVDYLKKS   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 151853 LPL9 RS12110 WP 003585566.1   FNYTKADQLQQAIKGLLKLVLNVVVLWIGASLVMANKMSLGQMLTFNALLAYFTNPLESIINLQPKLQMAKVANNRLNEVYLVES   476
NTDB id 358 SMU RS01425 WP 002263523.1       FKLHKYSAIQTALKSGAKLILNVVILWYGSRLVMDNKISVGQLITFNALLSYFSNPIENIINLQSKLQSARVANTRLNEVYLVES   510
NTDB id 421 SGO RS10260 WP 012131060.1       FAYGRSESLQKVLKAAARLILNVLILWLGATLVMDQKISLGQLITYNTLLVYFTNPLENIINLQTKLQSARVANERLNEVYLVKS   466
NTDB id 511 SMSK321 RS10730 WP 000668322.1   FTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTNPLENIINLQTKLQTAQVANNRLNEVYLVTS   466
NTDB id 483 SM12261 RS00275 WP 000668315.1   FTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTNPLENIINLQTKLQTAQVANNRLNEVYLVAS   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 151853 LPL9 RS12110 WP 003585566.1   EFKEQRSLNDRHLIDGAINVTDVSFKYGFGQDVLKQINLEIPENAKYTIVGMSGSGKSTLAKLLVGFYPVDTGKGKITFNGVPIS   561
NTDB id 358 SMU RS01425 WP 002263523.1       EFEKDGDLSENSFLDGDISFENLSYKYGFGRDTLSDINLSIKKGSKVSLVGASGSGKTTLAKLIVNFYEP..NKGIVRINCNDLK   593
NTDB id 421 SGO RS10260 WP 012131060.1       EFEEKKLIKDLSHFQADIDFRGVSYKYGYGANVLSEIDLHIPAGSKTSFVGVSGSGKTTLAKMMVHFYAP..NQGDICLGGVNLN   549
NTDB id 511 SMSK321 RS10730 WP 000668322.1   EFEEKKTVEDLSLMKGEMTFKQVYYKYGYGRDVLSDINLTIPQGSKVAFVGISGSGKTTLAKMMVNFYDP..SQGEISLGGVNLN   549
NTDB id 483 SM12261 RS00275 WP 000668315.1   EFEEKKTVEDLSLMKGDMTFKQVSYKYGYGRDVLLDINLTIPQGSKVAFVGISGSGKTTLAKMMVNFYDP..SQGEISLGGVNLN   549
NTDB id 247 KZH43 RS00220 WP 000668290.1     EFEEKKTVEDLSLMKGDMTFKQVHYKYGYGRDVLSDINLTVPQGSKVAFVGISGSGKTTLAKMMVNFYDP..SQGEISLGGVNLN   549
NTDB id 206 SPD RS00235 WP 000668290.1       EFEEKKTVEDLSLMKGDMTFKQVHYKYGYGRDVLSDINLTVPQGSKVAFVGISGSGKTTLAKMMVNFYDP..SQGEISLGGVNLN   549
NTDB id 171 SPR RS00230 WP 000668290.1       EFEEKKTVEDLSLMKGDMTFKQVHYKYGYGRDVLSDINLTVPQGSKVAFVGISGSGKTTLAKMMVNFYDP..SQGEISLGGVNLN   549
NTDB id 131 SP RS00255 WP 000668284.1        EFEEKKTVEDLSLMKGDMTFKQVHYKYGYGRDVLSDINLTVPQGSKVAFVGISGSGKTTLAKMMVNFYDP..SQGEISLGSVNLN   549
consensus                                    !!********************** *!!!*!***!**!*!******!***!!*!!!!!*!!!!**!*!!**  **!**********
```

```
logo
NTDB id 151853 LPL9 RS12110 WP 003585566.1   DVDLTTLRQYIEYVPQDPFIFSGSVIENLTLGSRSNITEADIEAACSVAEIAGDISNLPQIWQTKLSESGSILSGGQKQRLAIAR   646
NTDB id 358 SMU RS01425 WP 002263523.1       VIDKTALRRHISYLPQQAYVFSGSIMDNLVLGAKEGTSQEDIIRACEIAEIRSDIEQMPQGYQTEL.SDGAGISGGQKQRIALAR   677
NTDB id 421 SGO RS10260 WP 012131060.1       QLDKQALRQYINYLPQQPYVFNGTILENLLLGAREGTTQEDILRAVELAEIRSDIERMPLNYQTELSADGAGISGGQRQRIALAR   634
NTDB id 511 SMSK321 RS10730 WP 000668322.1   QIDKKALRQYINYLPQQPYVFNGTILENLLLGAKEGTTQEDILRAVELAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALAR   634
NTDB id 483 SM12261 RS00275 WP 000668315.1   QIDKKALRQYINYLPQQPYVFNGTILDNLLLGAKEGTTQEDILRAVELAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALAR   634
NTDB id 247 KZH43 RS00220 WP 000668290.1     QIDKKALRQYINYLPQQPYVFNGTILENLLLGAKEGTTQEDILRAVELAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALAR   634
NTDB id 206 SPD RS00235 WP 000668290.1       QIDKKALRQYINYLPQQPYVFNGTILENLLLGAKEGTTQEDILRAVELAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALAR   634
NTDB id 171 SPR RS00230 WP 000668290.1       QIDKKALRQYINYLPQQPYVFNGTILENLLLGAKEGTTQEDILRAVELAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALAR   634
NTDB id 131 SP RS00255 WP 000668284.1        QIDKKALRQYINYLSQQPYVFNGTILENLLLGAKEGTTQEDILRAVELAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALAR   634
consensus                                    **!***!!**!*!**!****!*!****!!*!!********!!**!***!!!**!!***!***!!*!***!***!!!!*!!*!*!!
```

```
logo
NTDB id 151853 LPL9 RS12110 WP 003585566.1   ALLSPAKVLIFDESTSSLDTITERKIVDRLLAMTDRTIIFVAHRLTIAAKTEQIVVMDHGAIVEQGNHAELLAKQGYYARLVSE   730
NTDB id 358 SMU RS01425 WP 002263523.1       ALLTQAPVLILDEATSSLDILTEKKIISNLLQMTEKTIIFVAHRLSISQRTDEVIVMDQGKIVEQGTHKELLAKQGFYYNLFN.   760
NTDB id 421 SGO RS10260 WP 012131060.1       ALLTDAPVLILDEATSSLDILTEKRIIDNLMVL.DKTIIFIAHRLTIAERSEQVVVLDQGRIVESGSHKELIEREGFYHHLVNS   717
NTDB id 511 SMSK321 RS10730 WP 000668322.1   ALLTDAPILILDEATSSLDILTEKRIVDNLMAL.DKTLIFIAHRLTIAERTEKVVVLNQGKIVEEGKHADLLAQGGFYAHLVNS   717
NTDB id 483 SM12261 RS00275 WP 000668315.1   ALLTDAPVLILDEATSSLDILTEKRIVDNLMAL.DKTLIFIAHRLTIAERTEKVVVLDQGKIVEEGNHADLLAQGGFYAHLVNS   717
NTDB id 247 KZH43 RS00220 WP 000668290.1     ALLTDAPVLILDEATSSLDILTEKRIVDNLIAL.DKTLIFIAHRLTIAERTEKVVVLDQGKIVEEGKHADLLAQGGFYAHLVNS   717
NTDB id 206 SPD RS00235 WP 000668290.1       ALLTDAPVLILDEATSSLDILTEKRIVDNLIAL.DKTLIFIAHRLTIAERTEKVVVLDQGKIVEEGKHADLLAQGGFYAHLVNS   717
NTDB id 171 SPR RS00230 WP 000668290.1       ALLTDAPVLILDEATSSLDILTEKRIVDNLIAL.DKTLIFIAHRLTIAERTEKVVVLDQGKIVEEGKHADLLAQGGFYAHLVNS   717
NTDB id 131 SP RS00255 WP 000668284.1        ALLTDAPVLILDEATSSLDILTEKRIVDNLIAL.DKTLIFIAHRLTIAERTEKVVVLDQGKIVEEGKHADLLAQGGFYAHLVNS   717
consensus                                    !!!**!**!!*!!*!!!!!**!!**!***!***  **!*!!*!!!!*!********!***!*!!!*!*!**!****!*!**!***
```

X non conserved

X similar

X $\geq$ 50% conserved