```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 358 SMU RS01425 WP 002263523.1        MKQVIYVVLIVIAVNILLEIIKRVTKRGGTVSSSNPLPDGQSKLFWRRHYKLVPQIDTRDCGPAVLASVAKHYGSNYSIA   80
NTDB id 421 SGO RS10260 WP 012131060.1        ........................................MKFRKQHY..RAQVDTRDCGVAALAMIFGYYGSYFSLA   36
NTDB id 483 SM12261 RS00275 WP 000668315.1    ........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYSLA   36
NTDB id 511 SMSK321 RS10730 WP 000668322.1    ........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYSLA   36
NTDB id 131 SP RS00255 WP 000668284.1         ........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYFLA   36
NTDB id 49140 INV104 RS00250 WP 000668299.1   ........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYFLA   36
NTDB id 247 KZH43 RS00220 WP 000668290.1      ........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYFLA   36
NTDB id 206 SPD RS00235 WP 000668290.1        ........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYFLA   36
NTDB id 171 SPR RS00230 WP 000668290.1        ........................................MKFGKRHY..RPQVDQMDCGVASLAMVFGYYGSYYFLA   36
consensus                                                                              **!***!!  **!*!**!!!*!*!!*****!!!****!

logo

NTDB id 358 SMU RS01425 WP 002263523.1        YLRELSKTNKQGTTALGIVEAAKKLGFETRSIKADMTLFDYNDLTYPFIVHVIKGKRLQHYYVVYGSQNNQLIIGDPDPS  160
NTDB id 421 SGO RS10260 WP 012131060.1        TLREKAKTTNDGTTALGLVKVAEGLNFETRAFKADMSLFDLEEVSYPFIAHILKDGKLLHYYVVTGQDKHTIHIADPDPQ  116
NTDB id 483 SM12261 RS00275 WP 000668315.1    HLRELAKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKDSIHIADPDPG  116
NTDB id 511 SMSK321 RS10730 WP 000668322.1    HLRELAKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKGSIHIADPDPG  116
NTDB id 131 SP RS00255 WP 000668284.1         HLRELAKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKDSIHIADPDPG  116
NTDB id 49140 INV104 RS00250 WP 000668299.1   HLRELAKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKDSIHIADPDPG  116
NTDB id 247 KZH43 RS00220 WP 000668290.1      HLRELAKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKDSIHIADPDPG  116
NTDB id 206 SPD RS00235 WP 000668290.1        HLRELAKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKDSIHIADPDPG  116
NTDB id 171 SPR RS00230 WP 000668290.1        HLRELAKTTMDGTTALGLVKVAEEIGFETRAIKADMTLFDLPDLTFPFVAHVLKEGKLLHYYVVTGQDKDSIHIADPDPG  116
consensus                                     *!!!**!!***!!!!!!*!**!****!!!!**!!!!!*!!!******!!**!**!***!*!!!!!*!*******!*!!!!*

logo

NTDB id 358 SMU RS01425 WP 002263523.1        VKVTRMSKERFQSEWTGLAIFLAPQPNYKPHKGEKNGLSNFFPLIFKQKALMTYIIIASLIVTLIDIVGSYYLQGILDEY  240
NTDB id 421 SGO RS10260 WP 012131060.1        VKMTKISRERFEQEWTGITIFLAPSPAYKPSQEKKNGLLDFIPLLIKQKGLITNIVLATLLVTLINIVGSYYLQSIIDTY  196
NTDB id 483 SM12261 RS00275 WP 000668315.1    VKLTKLPRERFAEEWTGVTLFMAPSPDYKPHKDQKNGLLSFIPILVKQRGLIANIVLATLLVTLINIVGSYYLQSIIDTY  196
NTDB id 511 SMSK321 RS10730 WP 000668322.1    VKLTKLPRERFAEEWTGVTLFMAPSPDYKPHKDQKNGLLSFIPILVKQRGLIANIVLATLLVTVINIVGSYYLQSIIDTY  196
NTDB id 131 SP RS00255 WP 000668284.1         VKLTKLPRERFEEEWTGVTLFMAPSPDYKPHKEQKNGLLSFIPILVKQRGLIANIVLATLLVTVINIVGSYYLQSIIDTY  196
NTDB id 49140 INV104 RS00250 WP 000668299.1   VKLTKLPRERFEEEWTGVTLFMAPSPDYKPYKEQKNGLLSFIPILVKQRGLIANIVLATLLVTGINIVGSYYLQSIIDTY  196
NTDB id 247 KZH43 RS00220 WP 000668290.1      VKLTKLPRERFEEEWTGVTLFMAPSPDYKPHKEQKNGLLSFIPILVKQRGLIANIVLATLLVTVINIVGSYYLQSIIDTY  196
NTDB id 206 SPD RS00235 WP 000668290.1        VKLTKLPRERFEEEWTGVTLFMAPSPDYKPHKEQKNGLLSFIPILVKQRGLIANIVLATLLVTVINIVGSYYLQSIIDTY  196
NTDB id 171 SPR RS00230 WP 000668290.1        VKLTKLPRERFEEEWTGVTLFMAPSPDYKPHKEQKNGLLSFIPILVKQRGLIANIVLATLLVTVINIVGSYYLQSIIDTY  196
consensus                                     !!*!****!!!**!!!!***!*!!*!*!!!****!!!!**!*!***!!**!***!**!*!*!!*!*!!!!!!!!*!*!*!

logo

NTDB id 358 SMU RS01425 WP 002263523.1        IPDQLISTLGMITIGLIITYIIQQVMAFAKEYLLAVLSLRLVIDVILSYIKHIFTLPMSFFATRRTGEITSRFTDANQII  320
NTDB id 421 SGO RS10260 WP 012131060.1        VPDHMKTTLGMISIGLIIVYILQQFLSYAQEYLLLVLGQRLSIDVILSYIKHVFQLPMSFFATRRTGEIVSRFTDANRII  276
NTDB id 483 SM12261 RS00275 WP 000668315.1    VPDQMRSTLGIISIGLVIVYILQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSII  276
NTDB id 511 SMSK321 RS10730 WP 000668322.1    VPDQMRSTLGIISIGLVIVYILQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSII  276
NTDB id 131 SP RS00255 WP 000668284.1         VPDQMRSTLGIISIGLVIVYIFQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSII  276
NTDB id 49140 INV104 RS00250 WP 000668299.1   VPDQMRSTLGIISIGLVIVYILQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSII  276
NTDB id 247 KZH43 RS00220 WP 000668290.1      VPDQMRSTLGIISIGLVIVYILQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSII  276
NTDB id 206 SPD RS00235 WP 000668290.1        VPDQMRSTLGIISIGLVIVYILQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSII  276
NTDB id 171 SPR RS00230 WP 000668290.1        VPDQMRSTLGIISIGLVIVYILQQILSYAQEYLLLVLGQRLSIDVILSYIKHVFHLPMSFFATRRTGEIVSRFTDANSII  276
consensus                                     *!!****!!!*!*!!!!*!*!!*!!****!*!!!!*!!**!!*!!!!!!!!!!*!*!!!!!!!!!!!!!!!!*!!!!!!!*!!
```

```
logo

NTDB id 358 SMU RS01425 WP 002263523.1        DAVASTIFSIFLDMTMVILVGGVLLAQNNNLFFLTLLSIPIYAIIIFAFLKPFEKMNHEVMESNAVVSSSIIEDINGMET   400
NTDB id 421 SGO RS10260 WP 012131060.1        DALASTILSIFLDVSIVSIIAIVLFSQNSSLFFLTLLGIPVYALIIFLFMKPFEKMNHETMEANSLLSSSIIEDINGIET   356
NTDB id 483 SM12261 RS00275 WP 000668315.1    DALASTILSIFLDVSTVVIISLVLFSQNTNLFFITLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIET   356
NTDB id 511 SMSK321 RS10730 WP 000668322.1    DALASTILSIFLDVSTVVIISLVLFSQNTNLFFMTLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIET   356
NTDB id 131 SP RS00255 WP 000668284.1         DALASTILSIFLDVSTVVIISLVLFSQNTNLFFMTLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIET   356
NTDB id 49140 INV104 RS00250 WP 000668299.1   DALASTILSIFLDVSTVVIISLVLFSQNTNLFFMTLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIET   356
NTDB id 247 KZH43 RS00220 WP 000668290.1      DALASTILSIFLDVSTVVIISLVLFSQNTNLFFMTLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIET   356
NTDB id 206 SPD RS00235 WP 000668290.1        DALASTILSIFLDVSTVVIISLVLFSQNTNLFFMTLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIET   356
NTDB id 171 SPR RS00230 WP 000668290.1        DALASTILSIFLDVSTVVIISLVLFSQNTNLFFMTLLALPIYTVIIFAFMKPFEKMNRDTMEANAVLSSSIIEDINGIET   356
consensus                                     !!*!!!!*!!!!!***!*****!!**!!**!!!*!!!**!*!**!!!*!*!!!!!!!***!!*!***!!!!!!!!!!*!!

logo

NTDB id 358 SMU RS01425 WP 002263523.1        IKSLTSESARYQNIDSEFVDYLEKNFKLHKYSAIQTALKSGAKLILNVVILWYGSRLVMDNKISVGQLITRNALLSYFSN   480
NTDB id 421 SGO RS10260 WP 012131060.1        IKSLTSEKQRYQKIDKEFVTYLKKSFAYGRSESLQKVLKAAARLILNVLILWLGATLVMDQKISLGQLITYNTLLVYFTN   436
NTDB id 483 SM12261 RS00275 WP 000668315.1    IKSLTSESQRYQKIDKEFVDYLKKSFTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTN   436
NTDB id 511 SMSK321 RS10730 WP 000668322.1    IKSLTSESQRYQKIDKEFVDYLKKSFTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTN   436
NTDB id 131 SP RS00255 WP 000668284.1         IKSLTSESQRYQKIDKEFVDYLKKSFTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTN   436
NTDB id 49140 INV104 RS00250 WP 000668299.1   IKSLTSESQRYQKIDKEFVDYLKKSFTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTN   436
NTDB id 247 KZH43 RS00220 WP 000668290.1      IKSLTSESQRYQKIDKEFVDYLKKSFTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTN   436
NTDB id 206 SPD RS00235 WP 000668290.1        IKSLTSESQRYQKIDKEFVDYLKKSFTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTN   436
NTDB id 171 SPR RS00230 WP 000668290.1        IKSLTSESQRYQKIDKEFVDYLKKSFTYSRAESQQKALKKVAHLLLNVGILWMGAVLVMDGKMSLGQLITYNTLLVYFTN   436
consensus                                     !!!!!!!**!!!*!!*!!!*!!*!*!********!**!!**!*!*!!!*!!!*!**!!!!*!*!*!!!!!*!*!!*!!*!

logo

NTDB id 358 SMU RS01425 WP 002263523.1        PIENIINLQSKLQSARVANTRLNEVYLVESEFEKDGDLSENSFLDGDISFENLSYKYGFGRDTLSDINLSIKKGSKVSLV   560
NTDB id 421 SGO RS10260 WP 012131060.1        PLENIINLQTKLQSARVANERLNEVYLVKSEFEEKKLIKDLSHFQADIDFRGVSYKYGYGANVLSEIDLHIPAGSKTSFV   516
NTDB id 483 SM12261 RS00275 WP 000668315.1    PLENIINLQTKLQTAQVANNRLNEVYLVASEFEEKKTVEDLSLMKGDMTFKQVSYKYGYGRDVLLDINLTIPQGSKVAFV   516
NTDB id 511 SMSK321 RS10730 WP 000668322.1    PLENIINLQTKLQTAQVANNRLNEVYLVTSEFEEKKTVEDLSLMKGEMTFKQVYYKYGYGRDVLSDINLTIPQGSKVAFV   516
NTDB id 131 SP RS00255 WP 000668284.1         PLENIINLQTKLQTAQVANNRLNEVYLVASEFEEKKTVEDLSLMKGDMTFKQVHYKYGYGRDVLSDINLTVPQGSKVAFV   516
NTDB id 49140 INV104 RS00250 WP 000668299.1   PLENIINLQTKLQTAQVANNRLNEVYLVASEFEEKKTVEDLSLMKGDMTFKQVHYKYGYGRDVLSDINLTVPQGSKVAFV   516
NTDB id 247 KZH43 RS00220 WP 000668290.1      PLENIINLQTKLQTAQVANNRLNEVYLVASEFEEKKTVEDLSLMKGDMTFKQVHYKYGYGRDVLSDINLTVPQGSKVAFV   516
NTDB id 206 SPD RS00235 WP 000668290.1        PLENIINLQTKLQTAQVANNRLNEVYLVASEFEEKKTVEDLSLMKGDMTFKQVHYKYGYGRDVLSDINLTVPQGSKVAFV   516
NTDB id 171 SPR RS00230 WP 000668290.1        PLENIINLQTKLQTAQVANNRLNEVYLVASEFEEKKTVEDLSLMKGDMTFKQVHYKYGYGRDVLSDINLTVPQGSKVAFV   516
consensus                                     !*!!!!!!!*!!!*!*!!!*!!!!!!!!!*!!!!********!*******!****!!!!*!***!**!*!****!!!***!

logo

NTDB id 358 SMU RS01425 WP 002263523.1        GASGSGKTTLAKLIVNFYEPNKGIVRINGNDLKVIDKTALRRHISYLPQQAYVFSGSIMDNLVLGAKEGTSQEDIIRACE   640
NTDB id 421 SGO RS10260 WP 012131060.1        GVSGSGKTTLAKMMVHFYAPNQGDICLGGVNLNQLDKQALRQYINYLPQQPYVFNGTILENLLLGAREGTTQEDILRAVE   596
NTDB id 483 SM12261 RS00275 WP 000668315.1    GISGSGKTTLAKMMVNFYDPSQGEISLGGVNLNQIDKKALRQYINYLPQQPYVFNGTILDNLLLGAKEGTTQEDILRAVE   596
NTDB id 511 SMSK321 RS10730 WP 000668322.1    GISGSGKTTLAKMMVNFYDPSQGEISLGGVNLNQIDKKALRQYINYLPQQPYVFNGTILENLLLGAKEGTTQEDILRAVE   596
NTDB id 131 SP RS00255 WP 000668284.1         GISGSGKTTLAKMMVNFYDPSQGEISLGSVNLNQIDKKALRQYINYLSQQPYVFNGTILENLLLGAKEGTTQEDILRAVE   596
NTDB id 49140 INV104 RS00250 WP 000668299.1   GISGSGKTTLAKMMVNFYDPSQGEISLGGVNLNQIDKKALRQYINYLPQQPYVFNGTILENLLLGAKEGTTQEDILRAVE   596
NTDB id 247 KZH43 RS00220 WP 000668290.1      GISGSGKTTLAKMMVNFYDPSQGEISLGGVNLNQIDKKALRQYINYLPQQPYVFNGTILENLLLGAKEGTTQEDILRAVE   596
NTDB id 206 SPD RS00235 WP 000668290.1        GISGSGKTTLAKMMVNFYDPSQGEISLGGVNLNQIDKKALRQYINYLPQQPYVFNGTILENLLLGAKEGTTQEDILRAVE   596
NTDB id 171 SPR RS00230 WP 000668290.1        GISGSGKTTLAKMMVNFYDPSQGEISLGGVNLNQIDKKALRQYINYLPQQPYVFNGTILENLLLGAKEGTTQEDILRAVE   596
consensus                                     !*!!!!!!!!!!**!*!!*!**!********!***!!*!!!**!*!!*!!*!!!*!*!**!!*!!!*!!!!*!!!!*!!*!
```

```
logo

NTDB id 358 SMU RS01425 WP 002263523.1        IAEIRSDIEQMPQGYQTEL.SDGAGISGGQKQRIALARALLTQAPVLILDEATSSLDILTEKKIISNLLQMTEKTIIFVA   719
NTDB id 421 SGO RS10260 WP 012131060.1        LAEIRSDIERMPLNYQTELSADGAGISGGQRQRIALARALLTDAPVLILDEATSSLDILTEKRIIDNLMVL.DKTIIFIA   675
NTDB id 483 SM12261 RS00275 WP 000668315.1    LAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALARALLTDAPVLILDEATSSLDILTEKRIVDNLMAL.DKTLIFIA   675
NTDB id 511 SMSK321 RS10730 WP 000668322.1    LAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALARALLTDAPILILDEATSSLDILTEKRIVDNLMAL.DKTLIFIA   675
NTDB id 131 SP RS00255 WP 000668284.1         LAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALARALLTDAPVLILDEATSSLDILTEKRIVDNLIAL.DKTLIFIA   675
NTDB id 49140 INV104 RS00250 WP 000668299.1   LAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALARALLTDAPVLILDEATSSLDILTEKRIVDNLMAL.DKTLIFIA   675
NTDB id 247 KZH43 RS00220 WP 000668290.1      LAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALARALLTDAPVLILDEATSSLDILTEKRIVDNLIAL.DKTLIFIA   675
NTDB id 206 SPD RS00235 WP 000668290.1        LAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALARALLTDAPVLILDEATSSLDILTEKRIVDNLIAL.DKTLIFIA   675
NTDB id 171 SPR RS00230 WP 000668290.1        LAEIREDIERMPLNYQTELTSDGAGISGGQRQRIALARALLTDAPVLILDEATSSLDILTEKRIVDNLIAL.DKTLIFIA   675
consensus                                     *!!!!*!!!*!!**!!!!!**!!!!!!!!!*!!!!!!!!!!!*!!*!!!!!!!!!!!!!!!!!*!**!!***  *!!*!!*!

logo

NTDB id 358 SMU RS01425 WP 002263523.1        HRLSISQRTDEVIVMDQGKIVEQGTHKELLAKQGFYYNLFN.   760
NTDB id 421 SGO RS10260 WP 012131060.1        HRLTIAERSEQVVVLDQGRIVESGSHKELIEREGFYHHLVNS   717
NTDB id 483 SM12261 RS00275 WP 000668315.1    HRLTIAERTEKVVVLDQGKIVEEGNHADLLAQGGFYAHLVNS   717
NTDB id 511 SMSK321 RS10730 WP 000668322.1    HRLTIAERTEKVVVLNQGKIVEEGKHADLLAQGGFYAHLVNS   717
NTDB id 131 SP RS00255 WP 000668284.1         HRLTIAERTEKVVVLDQGKIVEEGKHADLLAQGGFYAHLVNS   717
NTDB id 49140 INV104 RS00250 WP 000668299.1   HRLTIAERTEKVVVLDQGKIVEEGKHADLLAQGGFYAHLVNS   717
NTDB id 247 KZH43 RS00220 WP 000668290.1      HRLTIAERTEKVVVLDQGKIVEEGKHADLLAQGGFYAHLVNS   717
NTDB id 206 SPD RS00235 WP 000668290.1        HRLTIAERTEKVVVLDQGKIVEEGKHADLLAQGGFYAHLVNS   717
NTDB id 171 SPR RS00230 WP 000668290.1        HRLTIAERTEKVVVLDQGKIVEEGKHADLLAQGGFYAHLVNS   717
consensus                                     !!!*!**!***!*!**!!*!!!*!*!**!****!!!**!*!*
```

X non conserved

X similar

X $\geq$ 50% conserved