```
logo
NTDB id 1323 RA0C RS07335 WP 004916218.1        .MLVKVYGSAIHGVSAQTITIEVNVDQGV.GYHLVGLPDNAIKESSHRISAALKNVGYKLPG.KKITINMAPADLRKEGS   77
NTDB id 148607 L63ED372 RS14320 WP 062406863.1 MALATIHSRALVGLAAPAVMVEVHLANGLPSFTLVGLADVEVKEARERVRSALQNSGLDFPHNQRITVNLAPADLPKDSG   80
NTDB id 1271 LPP RS03220 WP 011213198.1         MSLAFTKTRSTIGIVAQPVSVEVHLSNGLPSFTMVGLAETAVKESKDRVRSAIINSQFEFPC.RKITVNLGPANLPKTGS   79
NTDB id 1248 GC085 RS03150 WP 011213198.1       MSLAFTKTRSTIGIVAQPVSVEVHLSNGLPSFTMVGLAETAVKESKDRVRSAIINSQFEFPC.RKITVNLGPANLPKTGS   79
NTDB id 1153 A1552VC RS00115 WP 000521788.1    MGLAIIHSRASIGVQAPPVTVEVHISNGMPGFTLVGLPETTVKESRDRVRSAIINSRFEFPA.KRITVNLAPADLPKEGG   79
NTDB id 1397 DSB67 RS15690 WP 005535577.1      MGLAIIHSRASVGVQAPSVSVEVHISNGMPGFTLVGLPETTVKESKDRVRSAIVNSNFQFPA.KRITVNLAPADLPKEGG   79
NTDB id 1349 HI 1117 AAC22771.1                 MSLAIVYSRASMGVQAPLVTIEVHLSNGKPGFTLVGLPEKTVKEAQDRVRSALMNAQFKYPA.KRITVNLAPADLPKEGG   79
NTDB id 1387 A4U84 RS06900 WP 020457569.1      MSLAIIYSRASIGVEAPLVTIEVHISGGSPGLTLVGLPEKSVKEAQDRVRSALMNANFDYPA.RRITINLAPADLPKEGG   79
consensus                                       *  !*  *  *****!*  !*  ***!!****!*****!!!**   *!!***!***!**!*****!*  **!!*!**!!*!*!***

logo
NTDB id 1323 RA0C RS07335 WP 004916218.1        AYDLSIALGILAASGQIIAPEIERYLIMGELSLDGGLQPIKGVLPIAIR.AREEGFKGIILPKQNTREAAIVNDLEVYGV  156
NTDB id 148607 L63ED372 RS14320 WP 062406863.1 RLDLPIALGILAASGQIDASKLAGYEFAGELSLSGELRPVRGALAMSLVLRQQRVRTRLVLPPGSAEEAALVPDAEVFRA  160
NTDB id 1271 LPP RS03220 WP 011213198.1         GFDLPIALGILAASEQIPLTNLANHEFIGELALSGELRGVSAIIPAV..LAAHKDNQHLIIANANAAEASLTGHQKVFTA  157
NTDB id 1248 GC085 RS03150 WP 011213198.1       GFDLPIALGILAASEQIPLTNLANHEFIGELALSGELRGVSAIIPAV..LAAHKDNQHLIIANANAAEASLTGHQKVFTA  157
NTDB id 1153 A1552VC RS00115 WP 000521788.1    RFDLPIALGILAASDQIARNKLESYEFIGELALSGEIRGVKGVLPAA..LAANQVERCLVVPHSNGDQAALVGVERHKSA  157
NTDB id 1397 DSB67 RS15690 WP 005535577.1      RFDLPIALGILAASEQIATDKLKNYEFVGELALSGGLRTVKGVLPAA..LAANKKQRHLVVPHANGDQAALVGKEQHKSA  157
NTDB id 1349 HI 1117 AAC22771.1                 RFDLPIAIGILAASDQLDASHLKQFEFVAELALTGQLRGVHGVIPAI..LAAQKSKRELIIAKQNANEASLVSDQNTYFA  157
NTDB id 1387 A4U84 RS06900 WP 020457569.1      RFDLPIAIGILAASGQIDSDKLKRIELLGELSLTGHLRGVHGAIPAV..LAASKAKREIIVPQQNANEVSLVSNTQTYCA  157
consensus                                       **!!*!!*!!!!!!*!*    *  ****!!*!*! **** *****   *** *  * ****  ** **  **     * *

logo
NTDB id 1323 RA0C RS07335 WP 004916218.1        ENIKEVIDFFNENCPLEPTKVNTRE....EFHKRVNLFPFDFSEVKGQETAKRAMEVAAAGGHNIILIGPPGSGKTMLAK  232
NTDB id 148607 L63ED372 RS14320 WP 062406863.1 QHLLDVVQQFLPPSSEPPPAPTDGWARMAAHTPSAPPRYADLADVKGQAGIKRVLEIAAAGGHSLLMVGPPGSGKSMLAQ  240
NTDB id 1271 LPP RS03220 WP 011213198.1         NNLREVCDYLCQGTSLQSLPPKPDL........LLNNYELDWSDIKGQQHAKNAMVIAACGGHSILLSGAPGSGKTMMAK  229
NTDB id 1248 GC085 RS03150 WP 011213198.1       NNLREVCDYLCQGTSLQSLPPKPDL........LLNNYELDWSDIKGQQHAKNAMVIAACGGHSILLSGAPGSGKTMMAK  229
NTDB id 1153 A1552VC RS00115 WP 000521788.1    QSLLEVCADLCGQQTLSLFQSSPSV........QQVSQTRDLQDIIGQQQGKRALEIAAAGNHNLLFLGPPGTGKTMLAS  229
NTDB id 1397 DSB67 RS15690 WP 005535577.1      QSLLEVCAELCGQHQLNLYQTPKKK........ELKAHGRDLQDIIGQQQGKRALEIAAAGNHNLLFLGPPGTGKTMLAS  229
NTDB id 1349 HI 1117 AAC22771.1                 QTLLDVVQFLNGQEKLPLATEIVKE....SAVNFSGKNTLDLTDIIGQQHAKRALTIAAAGQHNLLFLGPPGTGKTMLAS  233
NTDB id 1387 A4U84 RS06900 WP 020457569.1      STLLQVVNFLNNRDQLPIAQQLSQN....IAEN.RPLVSRDLTDIIGQQHAKRALIIAASGQHNLLFLGPPGTGKTMLAS  232
consensus                                       *  ***!   **      *                          !**** !!* *!*** *!!*! !*** *!*!!*!!*!*!

logo
NTDB id 1323 RA0C RS07335 WP 004916218.1        RIPSILPPLTLKEALETTKIHSVAGKMGAETSLMTIRPFRSPHHTISDVALVGGGSYPQPGEISLAHNGVLFLDEMPEFK  312
NTDB id 148607 L63ED372 RS14320 WP 062406863.1 RFAGLLPPMSIEDALESAAIASLAGR.F.ELSRWAQRPTGQPHHSASAVALVGGGSPPRPGEISLAHHGVLFLDELPEFP  318
NTDB id 1271 LPP RS03220 WP 011213198.1         RFSTLLPELSETQALECAAINSIRGKLP.DFREWRLPPFRAPHHTASPVALVGGGNPPKPGEISLAHHGVLFLDELPEFN  308
NTDB id 1248 GC085 RS03150 WP 011213198.1       RFSTLLPELSETQALECAAINSIRGKLP.DFREWRLPPFRAPHHTASPVALVGGGNPPKPGEISLAHHGVLFLDELPEFN  308
NTDB id 1153 A1552VC RS00115 WP 000521788.1    RLCDLLPEMSDEEAMETASIASLTQQEI.NQHNWKLRPFRAPHHSSSMAALVGGGTIPRPGEISLAHNGLLFLDEMPEFE  308
NTDB id 1397 DSB67 RS15690 WP 005535577.1      RLCDLLPEMSDEEAMETASVASLTQSEI.NEHNWKTRPFRAPHHSSSMAALVGGGSVPRPGEISLAHNGLLFLDEMPEFD  308
NTDB id 1349 HI 1117 AAC22771.1                 RLTGLLPEMTDLEAIETASVTSLVQNEL.NFHNWKQRPFRAPHHSASMPALVGGGTIPKPGEISLATNGVLFLDELPEFE  312
NTDB id 1387 A4U84 RS06900 WP 020457569.1      RLADLLPEMEDDEAIETASVTSLVQNEL.NFQNWKKRPFRSPHHSASMVALVGGGSIPKPGEISLAHNGVLFLDELPEFE  311
consensus                                       !*   *!!**** *!*!** * !*          ** *!***!!!**! *!!!!!!* !*!!!!!!!**!*!!!!!*!!!
```

```
logo
NTDB id 1323 RA0C RS07335 WP 004916218.1          RTVLEVMRQPLEDREVTISRAKFTVNYPASFMLVASMNPSPSGFFPDDPNNT.SSSFEMQRYLNKLSGPLLDRIDIHIEV   391
NTDB id 148607 L63ED372 RS14320 WP 062406863.1   RAALEALREPLETGSITIARAARRAEFPARFQLIAAMNPCPCGYLGSSTRACRCSPDQVSRYQGKLSGPLLDRIDLHIEV   398
NTDB id 1271 LPP RS03220 WP 011213198.1          RQVLETLREPLESGHICISRAAAQIEFPAKFQLIAAMNPCPCGQWGNSQANCMCTPDRISRYLAKLSAPLLDRIDMQVTI   388
NTDB id 1248 GC085 RS03150 WP 011213198.1        RQVLETLREPLESGHICISRAAAQIEFPAKFQLIAAMNPCPCGQWGNSQANCMCTPDRISRYLAKLSAPLLDRIDMQVTI   388
NTDB id 1153 A1552VC RS00115 WP 000521788.1      RKVLDSLREPLESGEIVISRAQGKTRFPARFQLVGALNPSPTGYYEGSQAR..ANPQSILRYLSRLSGPLLDRFDMSIEI   386
NTDB id 1397 DSB67 RS15690 WP 005535577.1        RKVLDSLREPLESGEIIISRAQGKTRFPARFQIVGALNPSPTGYYEGNQAR..TNPQAILRYLGRLSGPLLDRFDMSLEI   386
NTDB id 1349 HI 1117 AAC22771.1                  RKVLDALRQPLESGEIIISRANAKIQFPARFQLVAAMNPSPTGHYTGTHNR..TSPQQIMRYLNRLSGPFLDRFDLSIEV   390
NTDB id 1387 A4U84 RS06900 WP 020457569.1        RKVLDALRQPLESGEIIISRANAKVQFPACFQLIAAMNPSPTGHYQGTHNR..TSPQQLMRYLNRLSGPFLDRFDLSIEV   389
consensus                                        ! *!* *!*!!!**** !*!! *** *!!*!******!!*!*! *  *      **  * !!* *!!*!*!!! !* ***

logo
NTDB id 1323 RA0C RS07335 WP 004916218.1          QKVEFDQLSDK..RKGESSEIIRQRVLKAREIQQERYQDLAISYNAQMGPKEIEHFCELDEVSLLLIKNAMEKLNLSARA   469
NTDB id 148607 L63ED372 RS14320 WP 062406863.1   PSLGAQDLLNA..PPGESTEAIAARSGAARERALARQG....CANAALQGQAIDTHSRLDDSATALLQKAAAKLGWSGRS   472
NTDB id 1271 LPP RS03220 WP 011213198.1          HALSQEELIKPNTHLEKQSLAIREKVTKMHEIQMARQD....SLNANLNSKTCEMVCELGSEEQLFLREVMSKLKLSARG   464
NTDB id 1248 GC085 RS03150 WP 011213198.1        HALSQEELIKPNTHLEKQSLAIREKVTKMHEIQMARQD....SLNANLNSKTCEMVCELGSEEQLFLREVMSKLKLSARG   464
NTDB id 1153 A1552VC RS00115 WP 000521788.1      PALPKGTLANG.GDRGESTAAVRQRVWVARERMLARSG....KVNALLQSREIEQYCPLLKADAEFLESALHRLGLSIRA   461
NTDB id 1397 DSB67 RS15690 WP 005535577.1        PALPKGTLSEG.GDRGEPTAIVKERVNQARDCMLARSG....KVNALLGSREIEAFCPLQKSDAEFLENALHRLGLSIRA   461
NTDB id 1349 HI 1117 AAC22771.1                  PLLPQGSLQNT.GDRGETSAQVREKVLKVREIQMERAG....KINAYLNSKEIERDCKLNDKDAFFLEKALNKLGLSVRA   465
NTDB id 1387 A4U84 RS06900 WP 020457569.1        PLLPQGALQNNTDQRGETTEQARKRVLEARHLQFNRRG....KINAQLTTKEIEQDCKLTDRDALFLENALTKLGLSVRA   465
consensus                                        * *    !      *****  ** **  *******! *     *!! *******  * !   *  **  ** *!**! !*

logo
NTDB id 1323 RA0C RS07335 WP 004916218.1          YDRILKVSRTIADLERETNIQSHHIAEAIQYRSLDRDFWKV.....   510
NTDB id 148607 L63ED372 RS14320 WP 062406863.1   VHRSLKVARTIADLAGSDTIASVHVAEALQYRRVLQGQ........   510
NTDB id 1271 LPP RS03220 WP 011213198.1          YHRLLKVSRTIADMNSSKKVLLNHLQQALSYKQNLHLPK.......   503
NTDB id 1248 GC085 RS03150 WP 011213198.1        YHRLLKVSRTIADMNSSKKVLLNHLQQALSYKQNLHLPK.......   503
NTDB id 1153 A1552VC RS00115 WP 000521788.1      YHRIIKVARTIADLQGEAQIARPHLAEALGYRAMDRLLKQLSAQNV   507
NTDB id 1397 DSB67 RS15690 WP 005535577.1        YHRIIKVARTIADLEGSPQIERTHLAEALGYRAMDRLLKQLTAQAV   507
NTDB id 1349 HI 1117 AAC22771.1                  YHRILKVSRTIADLQGEQQIFQPHLAEALGYRAMVRLLQKLSNM..   509
NTDB id 1387 A4U84 RS06900 WP 020457569.1        YHRILKVSRTIADLAGEAQIQQPHLAEALGYRAMDRLLQRLQGES.   510
consensus                                        **!**!!*!!!!!* *  **   !***!* !* * **   *
```

X non conserved

X similar

X $\geq$ 50% conserved