```
logo
NTDB id 1323 RA0C RS07335 WP 004916218.1        .MLVKVYGSAIHGVSAQTITIEVNVDQGV.GYHLVGLPDNAIKESSHRISAALKNVGYKLPG.KKITINMAPADLRKEGS   77
NTDB id 1129788 AACL56 RS03845 WP 339088510.1   MSLSLVQSRALLGLEAASVTVEVHLANGLPSFTLVGLAETEVKEARERVRSAIQNAGLEFPNNKRITVNLAPADLPKDSG   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        AYDLSIALGILAASGQIIAPEIERYLIMGELSLDGGLQPIKGVLPIAIRAREEGF.KGIILPKQNTREAAIVNDLEVYGV   156
NTDB id 1129788 AACL56 RS03845 WP 339088510.1   RFDLPIALGILAASGQIDNARLAGHEFAGELSLSGELRPVRGALAMALALHTRGVATRLVLPMDSAHEAALVPGGEVYGA   160
NTDB id 1271 LPP RS03220 WP 011213198.1         GFDLPIALGILAASEQIPLTNLANHEFIGELALSGELRGVSAIIPAVLAAHK..DNQHLIIANANAAEASLTGHQKVFTA   157
NTDB id 1248 GC085 RS03150 WP 011213198.1       GFDLPIALGILAASEQIPLTNLANHEFIGELALSGELRGVSAIIPAVLAAHK..DNQHLIIANANAAEASLTGHQKVFTA   157
NTDB id 1153 A1552VC RS00115 WP 000521788.1     RFDLPIALGILAASDQIARNKLESYEFIGELALSGEIRGVKGVLPAALAANQ..VERCLVVPHSNGDQAALVGVERHKSA   157
NTDB id 1397 DSB67 RS15690 WP 005535577.1       RFDLPIALGILAASEQIATDKLKNYEFVGELALSGGLRTVKGVLPAALAANK..KQRHLVVPHANGDQAALVGKEQHKSA   157
NTDB id 1349 HI 1117 AAC22771.1                 RFDLPIAIGILAASDQLDASHLKQFEFVAELALTGQLRGVHGVIPAILAAQK..SKRELIIAKQNANEASLVSDQNTYFA   157
NTDB id 1387 A4U84 RS06900 WP 020457569.1       RFDLPIAIGILAASGQIDSDKLKRIELLGELSLTGHLRGVHGAIPAVLAASK..AKREIIVPQQNANEVSLVSNTQTYCA   157
consensus                                       **!!*!!*!!!!!!*!*    *   ****!!*!*! **** ***** *** *    * ****  ** ** **     * *

logo
NTDB id 1323 RA0C RS07335 WP 004916218.1        ENIKEVIDFFNENCPLEPTKV..NTREE......FHKRVNLFPFDFSEVKGQETAKRAMEVAAAGGHNIILIGPPGSGKT   228
NTDB id 1129788 AACL56 RS03845 WP 339088510.1   THLLDVVRQFLAGNGAQAPSSEPEANDGWSRIEAAPGAPAPRYADLCDVKGHAGVKRALEIAAAGGHSLLMVGEPGSGKS   240
NTDB id 1271 LPP RS03220 WP 011213198.1         NNLREVCDYLCQGTSLQSLPPKPDL............LLNNYELDWSDIKGQQHAKNAMVIAACGGHSILLSGAPGSGKT   225
NTDB id 1248 GC085 RS03150 WP 011213198.1       NNLREVCDYLCQGTSLQSLPPKPDL............LLNNYELDWSDIKGQQHAKNAMVIAACGGHSILLSGAPGSGKT   225
NTDB id 1153 A1552VC RS00115 WP 000521788.1     QSLLEVCADLCGQQTLSLFQSSPSV............QQVSQTRDLQDIIGQQQGKRALEIAAAGNHNLLFLGPPGTGKT   225
NTDB id 1397 DSB67 RS15690 WP 005535577.1       QSLLEVCAELCGQHQLNLYQTPKKK............ELKAHGRDLQDIIGQQQGKRALEIAAAGNHNLLFLGPPGTGKT   225
NTDB id 1349 HI 1117 AAC22771.1                 QTLLDVVQFLNGQEKLPLATEIVKE........SAVNFSGKNTLDLTDIIGQQHAKRALTIAAAGQHNLLFLGPPGTGKT   229
NTDB id 1387 A4U84 RS06900 WP 020457569.1       STLLQVVNFLNNRDQLPIAQQLSQN........IAEN.RPLVSRDLTDIIGQQHAKRALIIAASGQHNLLFLGPPGTGKT   228
consensus                                       * ***!  **     *                              !**** !** *!*!* *!!*! !*** *!*!!*!!*

logo
NTDB id 1323 RA0C RS07335 WP 004916218.1        MLAKRIPSILPPLTLKEALETTKIHSVAGKMGAETSLMTIRPFRSPHHTISDVALVGGGSYPQPGEISLAHNGVLFLDEM   308
NTDB id 1129788 AACL56 RS03845 WP 339088510.1   MLAQRFAGLLPAMSIDEALESAAIASLGGR.FAAE.RWMCRPTSAPHHTSSAVALVGGGSPPRPGEISRAHRGVLFLDEF   318
NTDB id 1271 LPP RS03220 WP 011213198.1         MMAKRFSTLLPELSETQALECAAINSIRGKLPDFR.EWRLPPFRAPHHTASPVALVGGGNPPKPGEISLAHHGVLFLDEL   304
NTDB id 1248 GC085 RS03150 WP 011213198.1       MMAKRFSTLLPELSETQALECAAINSIRGKLPDFR.EWRLPPFRAPHHTASPVALVGGGNPPKPGEISLAHHGVLFLDEL   304
NTDB id 1153 A1552VC RS00115 WP 000521788.1     MLASRLCDLLPEMSDEEAMETASIASLTQQEINQH.NWKLRPFRAPHHSSSMAALVGGGTIPRPGEISLAHNGLLFLDEM   304
NTDB id 1397 DSB67 RS15690 WP 005535577.1       MLASRLCDLLPEMSDEEAMETASVASLTQSEINEH.NWKTRPFRAPHHSSSMAALVGGGSVPRPGEISLAHNGLLFLDEM   304
NTDB id 1349 HI 1117 AAC22771.1                 MLASRLTGLLPEMTDLEAIETASVTSLVQNELNFH.NWKQRPFRAPHHSASMPALVGGGTIPKPGEISLATNGVLFLDEL   308
NTDB id 1387 A4U84 RS06900 WP 020457569.1       MLASRLADLLPEMEDDEAIETASVTSLVQNELNFQ.NWKKRPFRSPHHSASMVALVGGGSIPKPGEISLAHNGVLFLDEL   307
consensus                                       !*! !*  *!!**** *!*!** * !*          ** *!***!!!* ! *!!!!!!* !*!!!!!*!**!*!!!!!*
```

```
logo
NTDB id 1323 RA0C RS07335 WP 004916218.1        PEFKRTVLEVMRQPLEDREVTISRAKFTVNYPASFMLVASMNPSPSGFFPDDPNNT.SSSFEMQRYLNKLSGPLLDRIDI   387
NTDB id 1129788 AACL56 RS03845 WP 339088510.1  PEFARSALEALREPLETGTITISRAALSAEFPARFQLIAAMNPCPCGYLGSSLRPCRCTPTQVLRYQAKLSGPLLDRIDL   398
NTDB id 1271 LPP RS03220 WP 011213198.1         PEFNRQVLETLREPLESGHICISRAAAQIEFPAKFQLIAAMNPCPCGQWGNSQANCMCTPDRISRYLAKLSAPLLDRIDM   384
NTDB id 1248 GC085 RS03150 WP 011213198.1       PEFNRQVLETLREPLESGHICISRAAAQIEFPAKFQLIAAMNPCPCGQWGNSQANCMCTPDRISRYLAKLSAPLLDRIDM   384
NTDB id 1153 A1552VC RS00115 WP 000521788.1     PEFERKVLDSLREPLESGEIVISRAQGKTRFPARFQLVGALNPSPTGYYEGSQAR..ANPQSILRYLSRLSGPLLDRFDM   382
NTDB id 1397 DSB67 RS15690 WP 005535577.1       PEFDRKVLDSLREPLESGEIIISRAQGKTRFPARFQIVGALNPSPTGYYEGNQAR..TNPQAILRYLGRLSGPLLDRFDM   382
NTDB id 1349 HI 1117 AAC22771.1                 PEFERKVLDALRQPLESGEIIISRANAKIQFPARFQLVAAMNPSPTGHYTGTHNR..TSPQQIMRYLNRLSGPFLDRFDL   386
NTDB id 1387 A4U84 RS06900 WP 020457569.1       PEFERKVLDALRQPLESGEIIISRANAKVQFPACFQLIAAMNPSPTGHYQGTHNR..TSPQQLMRYLNRLSGPFLDRFDL   385
consensus                                       !!! ! *!* *!*!!!**** !!!! * * *!!*!******!!*!*! *  *      **  **!!* *!!*!*!!! !*

logo
NTDB id 1323 RA0C RS07335 WP 004916218.1        HIEVQKVEFDQLSDK..RKGESSEIIRQRVLKAREIQQERYQDLAISYNAQMGPKEIEHFCELDEVSLLLIKNAMEKLNL   465
NTDB id 1129788 AACL56 RS03845 WP 339088510.1  HIEVPAVSAQLLLDA..PPGESTDSIRTRVVAARERAMRRQGH....ANQALQGGAIDRHAALDPAARQFMFNAANKLGW   472
NTDB id 1271 LPP RS03220 WP 011213198.1         QVTIHALSQEELIKPNTHLEKQSLAIREKVTKMHEIQMARQDS....LNANLNSKTCEMVCELGSEEQLFLREVMSKLKL   460
NTDB id 1248 GC085 RS03150 WP 011213198.1       QVTIHALSQEELIKPNTHLEKQSLAIREKVTKMHEIQMARQDS....LNANLNSKTCEMVCELGSEEQLFLREVMSKLKL   460
NTDB id 1153 A1552VC RS00115 WP 000521788.1     SIEIPALPKGTLANG.GDRGESTAAVRQRVWVARERMLARSGK....VNALLQSREIEQYCPLLKADAEFLESALHRLGL   457
NTDB id 1397 DSB67 RS15690 WP 005535577.1       SLEIPALPKGTLSEG.GDRGEPTAIVKERVNQARDCMLARSGK....VNALLGSREIEAFCPLQKSDAEFLENALHRLGL   457
NTDB id 1349 HI 1117 AAC22771.1                 SIEVPLLPQGSLQNT.GDRGETSAQVREKVLKVREIQMERAGK....INAYLNSKEIERDCKLNDKDAFFLEKALNKLGL   461
NTDB id 1387 A4U84 RS06900 WP 020457569.1       SIEVPLLPQGALQNNTDQRGETTEQARKRVLEARHLQFNRRGK....INAQLTTKEIEQDCKLTDRDALFLENALTKLGL   461
consensus                                        ******    !      *****  ** *!  ****** ! *     *!* *******  * !   *  **  ** *!**

logo
NTDB id 1323 RA0C RS07335 WP 004916218.1        SARAYDRILKVSRTIADLERETNIQSHHIAEAIQYRSLDRDFWKV.....   510
NTDB id 1129788 AACL56 RS03845 WP 339088510.1  SARSTHRALKVARTIADLVGADAVEVPHVAEAVQYRRVLAGAQHK.....   517
NTDB id 1271 LPP RS03220 WP 011213198.1         SARGYHRLLKVSRTIADMNSSKKVLLNHLQQALSYKQNLHLPK.......   503
NTDB id 1248 GC085 RS03150 WP 011213198.1       SARGYHRLLKVSRTIADMNSSKKVLLNHLQQALSYKQNLHLPK.......   503
NTDB id 1153 A1552VC RS00115 WP 000521788.1     SIRAYHRIIKVARTIADLQGEAQIARPHLAEALGYRAMDRLLKQLSAQNV   507
NTDB id 1397 DSB67 RS15690 WP 005535577.1       SIRAYHRIIKVARTIADLEGSPQIERTHLAEALGYRAMDRLLKQLTAQAV   507
NTDB id 1349 HI 1117 AAC22771.1                 SVRAYHRILKVSRTIADLQGEQQIFQPHLAEALGYRAMVRLLQKLSNM..   509
NTDB id 1387 A4U84 RS06900 WP 020457569.1       SVRAYHRILKVSRTIADLAGEAQIQQPHLAEALGYRAMDRLLQRLQGES.   510
consensus                                       ! !***!**!!*!!!!!* *  **   !***!* !* * **   *
```

X non conserved

X similar

X $\geq$ 50% conserved