```
logo
NTDB id 1323 RA0C RS07335 WP 004916218.1      .MLVKVYGSAIHGVSAQTITIEVNVDQGV.GYHLVGLPDNAIKESSHRISAALKNVGYKLPGKKITINMAPADLRKEGSA   78
NTDB id 1271 LPP RS03220 WP 011213198.1       MSLAFTKTRSTIGIVAQPVSVEVHLSNGLPSFTMVGLAETAVKESKDRVRSAIINSQFEFPCRKITVNLGPANLPKTGSG   80
NTDB id 1248 GC085 RS03150 WP 011213198.1     MSLAFTKTRSTIGIVAQPVSVEVHLSNGLPSFTMVGLAETAVKESKDRVRSAIINSQFEFPCRKITVNLGPANLPKTGSG   80
NTDB id 390814 F8A90 RS00355 WP 166019070.1   MSLAMLRTRASLGLEAPEVQVEVHLSNGLPGLSIVGLPEAAVKESRERVRSALLNAGFEFPARRITLNLAPADLPKEGGR   80
NTDB id 1153 A1552VC RS00115 WP 000521788.1   MGLAIIHSRASIGVQAPPVTVEVHISNGMPGFTLVGLPETTVKESRDRVRSAIINSRFEFPAKRITVNLAPADLPKEGGR   80
NTDB id 1397 DSB67 RS15690 WP 005535577.1     MGLAIIHSRASVGVQAPSVSVEVHISNGMPGFTLVGLPETTVKESKDRVRSAIVNSNFQFPAKRITVNLAPADLPKEGGR   80
NTDB id 1387 A4U84 RS06900 WP 020457569.1     MSLAIIYSRASIGVEAPLVTIEVHISGGSPGLTLVGLPEKSVKEAQDRVRSALMNANFDYPARRITINLAPADLPKEGGR   80
NTDB id 1349 HI 1117 AAC22771.1               MSLAIVYSRASMGVQAPLVTIEVHLSNGKPGFTLVGLPEKTVKEAQDRVRSALMNAGFKYPAKRITVNLAPADLPKEGGR   80
consensus                                     **!*** *****!* !* ***!!****!******!!!**  *!!***!***!**! ****!***!!*!**!!*!*!*!**
```

```
logo
NTDB id 1323 RA0C RS07335 WP 004916218.1      YDLSIALGILAASGQIIAPEIERYLIMGELSLDGGLQPIKGVLPIAIRAREEGFKGIILPKQNTREAAIVNDLEVYGVEN  158
NTDB id 1271 LPP RS03220 WP 011213198.1       FDLPIALGILAASEQIPLTNLANHEFIGELALSGELRGVSAIIPAVLAAHKDN.QHLIIANANAAEASLTGHQKVFTANN  159
NTDB id 1248 GC085 RS03150 WP 011213198.1     FDLPIALGILAASEQIPLTNLANHEFIGELALSGELRGVSAIIPAVLAAHKDN.QHLIIANANAAEASLTGHQKVFTANN  159
NTDB id 390814 F8A90 RS00355 WP 166019070.1   FDLPIALGILVASGQIPEEAVAAMECLGELALDGSIRAVTGVLPAALCCRKAG.RTLVVPRGNADEAALAEELEVLAVGH  159
NTDB id 1153 A1552VC RS00115 WP 000521788.1   FDLPIALGILAASDQIARNKLESYEFIGELALSGEIRGVKGVLPAALAANQVE.RCLVVPHSNGDQAALVGVERHKSAQS  159
NTDB id 1397 DSB67 RS15690 WP 005535577.1     FDLPIALGILAASEQIATDKLKNYEFVGELALSGGLRTVKGVLPAALAANKKQ.RHLVVPHANGDQAALVGKEQHKSAQS  159
NTDB id 1387 A4U84 RS06900 WP 020457569.1     FDLPIAIGILAASGQIDSDKLKRIELLGELSLTGHLRGVHGAIPAVLAASKAK.REIIVPQQNANEVSLVSNTQTYCAST  159
NTDB id 1349 HI 1117 AAC22771.1               FDLPIAIGILAASDQLDASHLKQFEFVAELALTGQLRGVHGVIPAILAAQKSK.RELIIAKQNANEASLVSDQNTYFAQT  159
consensus                                     *!!*!!*!!!*!!*!*    *   ****!!*!*! **** ***!* *** *   * ****  !* ** **     * **
```

```
logo
NTDB id 1323 RA0C RS07335 WP 004916218.1      IKEVIDFFNENCPLEPTKVNTREEFHKRVNLFPFDFSEVKGQETAKRAMEVAAAGGHNIILIGPPGSGKTMLAKRIPSIL  238
NTDB id 1271 LPP RS03220 WP 011213198.1       LREVCDYLCQGTSLQSLPPKPDL....LLNNYELDWSDIKGQQHAKNAMVIAACGGHSILLSGAPGSGKTMMAKRFSTLL  235
NTDB id 1248 GC085 RS03150 WP 011213198.1     LREVCDYLCQGTSLQSLPPKPDL....LLNNYELDWSDIKGQQHAKNAMVIAACGGHSILLSGAPGSGKTMMAKRFSTLL  235
NTDB id 390814 F8A90 RS00355 WP 166019070.1   LLELVAHLLGRERLTPHVCSI....IPQARLPEPDLSEVRGQHQARRALEIAAAGGHNLLFAGPPGTGKTMLASRLSGIL  235
NTDB id 1153 A1552VC RS00115 WP 000521788.1   LLEVCADLCGQQTLSLFQSSPSV....QQVSQTRDLQDIIGQQQGKRALEIAAAGNHNLLFLGPPGTGKTMLASRLCDLL  235
NTDB id 1397 DSB67 RS15690 WP 005535577.1     LLEVCAELCGQHQLNLYQTPKKK....ELKAHGRDLQDIIGQQQGKRALEIAAAGNHNLLFLGPPGTGKTMLASRLCDLL  235
NTDB id 1387 A4U84 RS06900 WP 020457569.1     LLQVVNFLNNRDQLPIAQQLSQNIAEN.RPLVSRDLTDIIGQQHAKRALIIAASGQHNLLFLGPPGTGKTMLASRLADLL  238
NTDB id 1349 HI 1117 AAC22771.1               LLDVVQFLNGQEKLPLATEIVKESAVNFSGKNTLDLTDIIGQQHAKRALTIAAAGQHNLLFLGPPGTGKTMLASRLTGLL  239
consensus                                     ****  **     !                     !**** !!* ***!* *!!*! !*****!*!!*!!!!*!*!*  *!
```

```
logo
NTDB id 1323 RA0C RS07335 WP 004916218.1      PPLTLKEALETTKIHSVAGKMGAETSLMTIRPFRSPHHTISDVALVGGGSYPQPGEISLAHNGVLFLDEMPEFKRTVLEV  318
NTDB id 1271 LPP RS03220 WP 011213198.1       PELSETQALECAAINSIRGKLPD.FREWRLPPFRAPHHTASPVALVGGGNPPKPGEISLAHHGVLFLDELPEFNRQVLET  314
NTDB id 1248 GC085 RS03150 WP 011213198.1     PELSETQALECAAINSIRGKLPD.FREWRLPPFRAPHHTASPVALVGGGNPPKPGEISLAHHGVLFLDELPEFNRQVLET  314
NTDB id 390814 F8A90 RS00355 WP 166019070.1   PPLGEGEALEVAAVRSVCGLPI..MERWGQRPFRAPHHTASGVALVGGGSKPRPGEVSLAHHGVLFLDELAEFDRGVLEV  313
NTDB id 1153 A1552VC RS00115 WP 000521788.1   PEMSDEEAMETASIASLTQQEIN.QHNWKLRPFRAPHHSSSMAALVGGGTIPRPGEISLAHNGLLFLDEMPEFERKVLDS  314
NTDB id 1397 DSB67 RS15690 WP 005535577.1     PEMSDEEAMETASVASLTQSEIN.EHNWKTRPFRAPHHSSSMAALVGGGSVPRPGEISLAHNGLLFLDEMPEFDRKVLDS  314
NTDB id 1387 A4U84 RS06900 WP 020457569.1     PEMEDDEAIETASVTSLVQNELN.FQNWKKRPFRSPHHSASMVALVGGGSIPKPGEISLAHNGVLFLDELPEFERKVLDA  317
NTDB id 1349 HI 1117 AAC22771.1               PEMTDLEAIETASVTSLVQNELN.FHNWKQRPFRAPHHSASMPALVGGGTIPKPGEISLATNGVLFLDELPEFERKVLDA  318
consensus                                     !**** *!*!** * !*    *     ** *!!!*!!!**! *!!!!!!* !*!!!*!!!**!*!!!!!**!!*! !!*
```

```
logo
NTDB id 1323 RA0C RS07335 WP 004916218.1      MRQPLEDREVTISRAKFTVNYPASFMLVASMNPSPSGFFPDDPNNT.SSSFEMQRYLNKLSGPLLDRIDIHIEVQKVEFD   397
NTDB id 1271 LPP RS03220 WP 011213198.1       LREPLESGHICISRAAAQIEFPAKFQLIAAMNPCPCGQWGNSQANCMCTPDRISRYLAKLSAPLLDRIDMQVTIHALSQE   394
NTDB id 1248 GC085 RS03150 WP 011213198.1     LREPLESGHICISRAAAQIEFPAKFQLIAAMNPCPCGQWGNSQANCMCTPDRISRYLAKLSAPLLDRIDMQVTIHALSQE   394
NTDB id 390814 F8A90 RS00355 WP 166019070.1   MREPLESGRILISRASHQRRFPARFQLVAAMNPCPCGYLGDSRRNCSCTPAQIQRYQARLSGPLLDRIDLQVEVPGLPAE   393
NTDB id 1153 A1552VC RS00115 WP 000521788.1   LREPLESGEIVISRAQGKTRFPARFQLVGALNPSPTGYYEGSQA..RANPQSILRYLSRLSGPLLDRFDMSIEIPALPKG   392
NTDB id 1397 DSB67 RS15690 WP 005535577.1     LREPLESGEIIISRAQGKTRFPARFQIVGALNPSPTGYYEGNQA..RTNPQAILRYLGRLSGPLLDRFDMSLEIPALPKG   392
NTDB id 1387 A4U84 RS06900 WP 020457569.1     LRQPLESGEIIISRANAKVQFPACFQLIAAMNPSPTGHYQGTHN..RTSPQQLMRYLNRLSGPFLDRFDLSIEVPLLPQG   395
NTDB id 1349 HI 1117 AAC22771.1               LRQPLESGEIIISRANAKIQFPARFQLVAAMNPSPTGHYTGTHN..RTSPQQIMRYLNRLSGPFLDRFDLSIEVPLLPQG   396
consensus                                     *!*!!!****!!!! * * *!!*!******!!*!*! *  *       **  * !!* *!!*!*!!! !* *******

logo
NTDB id 1323 RA0C RS07335 WP 004916218.1      QLSDK..RKGESSEIIRQRVLKAREIQQERYQDLAISYNAQMGPKEIEHFCELDEVSLLLIKNAMEKLNLSARAYDRILK   475
NTDB id 1271 LPP RS03220 WP 011213198.1       ELIKPNTHLEKQSLAIREKVTKMHEIQMARQD....SLNANLNSKTCEMVCELGSEEQLFLREVMSKLKLSARGYHRLLK   470
NTDB id 1248 GC085 RS03150 WP 011213198.1     ELIKPNTHLEKQSLAIREKVTKMHEIQMARQD....SLNANLNSKTCEMVCELGSEEQLFLREVMSKLKLSARGYHRLLK   470
NTDB id 390814 F8A90 RS00355 WP 166019070.1   ELTSA..TPGEASAGVRERVLAARARQLARG.....GLNAHLDTHALEAACQLEDGERQWLAGVLSRLNLSARAYHRVLR   466
NTDB id 1153 A1552VC RS00115 WP 000521788.1   TLANG.GDRGESTAAVRQRVWVARERMLARSG....KVNALLQSREIEQYCPLLKADAEFLESALHRLGLSIRAYHRIIK   467
NTDB id 1397 DSB67 RS15690 WP 005535577.1     TLSEG.GDRGEPTAIVKERVNQARDCMLARSG....KVNALLGSREIEAFCPLQKSDAEFLENALHRLGLSIRAYHRIIK   467
NTDB id 1387 A4U84 RS06900 WP 020457569.1     ALQNNTDQRGETTEQARKRVLEARHLQFNRRG....KINAQLTTKEIEQDCKLTDRDALFLENALTKLGLSVRAYHRILK   471
NTDB id 1349 HI 1117 AAC22771.1               SLQNT.GDRGETSAQVREKVLKVREIQMERAG....KINAYLNSKEIERDCKLNDKDAFFLEKALNKLGLSVRAYHRILK   471
consensus                                      !      *** *  ****!  *******!       *!! * ****!  ! !   *  **  ** *! !! !*!*!***

logo
NTDB id 1323 RA0C RS07335 WP 004916218.1      VSRTIADLERETNIQSHHIAEAIQYRSLDRDFWKV.............   510
NTDB id 1271 LPP RS03220 WP 011213198.1       VSRTIADMNSSKKVLLNHLQQALSYKQNLHLPK...............   503
NTDB id 1248 GC085 RS03150 WP 011213198.1     VSRTIADMNSSKKVLLNHLQQALSYKQNLHLPK...............   503
NTDB id 390814 F8A90 RS00355 WP 166019070.1   VALTLSDLIDQDGVQRPQLMEAIGYRQLDRMMGRDPARPGASAQQRSA   514
NTDB id 1153 A1552VC RS00115 WP 000521788.1   VARTIADLQGEAQIARPHLAEALGYRAMDRLLKQLSAQNV........   507
NTDB id 1397 DSB67 RS15690 WP 005535577.1     VARTIADLEGSPQIERTHLAEALGYRAMDRLLKQLTAQAV........   507
NTDB id 1387 A4U84 RS06900 WP 020457569.1     VSRTIADLAGEAQIQQPHLAEALGYRAMDRLLQRLQGES.........   510
NTDB id 1349 HI 1117 AAC22771.1               VSRTIADLQGEQQIFQPHLAEALGYRAMVRLLQKLSNM..........   509
consensus                                     !**!**!*     **    ****!**!* *****  *
```

X non conserved

X similar

X $\geq$ 50% conserved