```
logo
NTDB id 1323 RAOC RS07335 WP 004916218.1     .MLVKVYGSAIHGVSAQTITIEVNVDQGV.GYHLVGLPDNAIKESSHRISAALKNVGYKLPGKKITINMAPADLRKEGSA   78
NTDB id 1271 LPP RS03220 WP 011213198.1      MSLAFTKTRSTIGIVAQPVSVEVHLSNGLPSFTMVGLAETAVKESKDRVRSAIINSQFEFPCRKITVNLGPANLPKTGSG   80
NTDB id 1248 GCO85 RS03150 WP 011213198.1    MSLAFTKTRSTIGIVAQPVSVEVHLSNGLPSFTMVGLAETAVKESKDRVRSAIINSQFEFPCRKITVNLGPANLPKTGSG   80
NTDB id 22315 PFL RS30530 WP 011064193.1     MSLAIIHSRAQVGVQAPAVSVEVHLANGLPSLTLVGLPEAAVKESKDRVRSAILNAGFNFPARRITLNLAPADLPKDGGR   80
NTDB id 1397 DSB67 RS15690 WP 005535577.1    MGLAIIHSRASVGVQAPSVSVEVHISNGMPGFTLVGLPETTVKESKDRVRSAIVNSNFQFPAKRITVNLAPADLPKEGGR   80
NTDB id 1153 A1552VC RS00115 WP 000521788.1  MGLAIIHSRASIGVQAPPVTVEVHISNGMPGFTLVGLPETTVKESRDRVRSAIINSRFEFPAKRITVNLAPADLPKEGGR   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 RAOC RS07335 WP 004916218.1     YDLSIALGILAASGQIIAPEIERYLIMGELSLDGGLQPIKGVLPIAIRAREEGFKGIILPKQNTREAAIVNDLEVYGVEN  158
NTDB id 1271 LPP RS03220 WP 011213198.1      FDLPIALGILAASEQIPLTNLANHEFIGELALSGELRGVSAIIPAVLAAHKDN.QHLIIANANAAEASLTGHQKVFTANN  159
NTDB id 1248 GCO85 RS03150 WP 011213198.1    FDLPIALGILAASEQIPLTNLANHEFIGELALSGELRGVSAIIPAVLAAHKDN.QHLIIANANAAEASLTGHQKVFTANN  159
NTDB id 22315 PFL RS30530 WP 011064193.1     FDLAIALGILAASVQVPALALDNIECLGELALSGAVRPVRGVLPAALAARDAG.HTLLVPRANAEEACLASGLKVIAVDH  159
NTDB id 1397 DSB67 RS15690 WP 005535577.1    FDLPIALGILAASEQIATDKLKNYEFVGELALSGGLRTVKGVLPAALAANKKQ.RHLVVPHANGDQAALVGKEQHKSAQS  159
NTDB id 1153 A1552VC RS00115 WP 000521788.1  FDLPIALGILAASDQIARNKLESYEFIGELALSGEIRGVKGVLPAALAANQVE.RCLVVPHSNGDQAALVGVERHKSAQS  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 RAOC RS07335 WP 004916218.1     IKEVIDFFNENCPLEPTKVNTREEFHKRVNLFPFDFSEVKGQETAKRAMEVAAAGGHNIILIGPPGSGKTMLAKRIPSIL  238
NTDB id 1271 LPP RS03220 WP 011213198.1      LREVCDYLCQGTSLQSLPPKPDL....LLNNYELDWSDIKGQQHAKNAMVIAACGGHSILLSGAPGSGKTMMAKRFSTLL  235
NTDB id 1248 GCO85 RS03150 WP 011213198.1    LREVCDYLCQGTSLQSLPPKPDL....LLNNYELDWSDIKGQQHAKNAMVIAACGGHSILLSGAPGSGKTMMAKRFSTLL  235
NTDB id 22315 PFL RS30530 WP 011064193.1     LLEAVAHFNGHAPIAPYVSDGLV....QSHFPYPDLSEVQGQLAAKRALLIAAAGAHNLLFSGPPGTGKTLLASRLPGLL  235
NTDB id 1397 DSB67 RS15690 WP 005535577.1    LLEVCAELCGQHQLNLYQTPKKK....ELKAHGRDLQDIIGQQQGKRALEIAAAGNHNLLFLGPPGTGKTMLASRLCDLL  235
NTDB id 1153 A1552VC RS00115 WP 000521788.1  LLEVCADLCGQQTLSLFQSSPSV....QQVSQTRDLQDIIGQQQGKRALEIAAAGNHNLLFLGPPGTGKTMLASRLCDLL  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 RAOC RS07335 WP 004916218.1     PPLTLKEALETTKIHSVAGKMGAETSLMTIRPFRSPHHTISDVALVGGGSYPQPGEISLAHNGVLFLDEMPEFKRTVLEV  318
NTDB id 1271 LPP RS03220 WP 011213198.1      PELSETQALECAAINSIRGKLPD.FREWRLPPFRAPHHTASPVALVGGGNPPKPGEISLAHHGVLFLDELPEFNRQVLET  314
NTDB id 1248 GCO85 RS03150 WP 011213198.1    PELSETQALECAAINSIRGKLPD.FREWRLPPFRAPHHTASPVALVGGGNPPKPGEISLAHHGVLFLDELPEFNRQVLET  314
NTDB id 22315 PFL RS30530 WP 011064193.1     PPLQEDEALEVAAIQSVAS.HKP.LRYWPQRPFRQPHHSASGAALVGGGSKPQPGEITLAHHGVLFLDELPEFDRKVLEV  313
NTDB id 1397 DSB67 RS15690 WP 005535577.1    PEMSDEEAMETASVASLTQSEIN.EHNWKTRPFRAPHHSSSMAALVGGGSVPRPGEISLAHNGLLFLDEMPEFDRKVLDS  314
NTDB id 1153 A1552VC RS00115 WP 000521788.1  PEMSDEEAMETASIASLTQQEIN.QHNWKLRPFRAPHHSSSMAALVGGGTIPRPGEISLAHNGLLFLDEMPEFERKVLDS  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      MRQPLEDREVTISRAKFTVNYPASFMLVASMNPSPSGFFPDDP.NNTSSSFEMQRYLNKLSGPLLDRIDIHIEVQKVEFD   397
NTDB id 1271 LPP RS03220 WP 011213198.1       LREPLESGHICISRAAAQIEFPAKFQLIAAMNPCPCGQWGNSQANCMCTPDRISRYLAKLSAPLLDRIDMQVTIHALSQE   394
NTDB id 1248 GC085 RS03150 WP 011213198.1     LREPLESGHICISRAAAQIEFPAKFQLIAAMNPCPCGQWGNSQANCMCTPDRISRYLAKLSAPLLDRIDMQVTIHALSQE   394
NTDB id 22315 PFL RS30530 WP 011064193.1      LREPMESGQIVIARARDRVQFPARFQLVAAMNPCPCGYLGEPSGRCRCTPEQIQRYRNKLSGPLLDRIDLHLTVARE..A   391
NTDB id 1397 DSB67 RS15690 WP 005535577.1     LREPLESGEIISRAQGKTRFPARFQIVGALNPSPTGYYEGN..QARTNPQAILRYLGRLSGPLLDRFDMSLEIPALPKG   392
NTDB id 1153 A1552VC RS00115 WP 000521788.1   LREPLESGEIVISRAQGKTRFPARFQLVGALNPSPTGYYEGS..QARANPQSILRYLSRLSGPLLDRFDMSIEIPALPKG   392
NTDB id 1387 A4U84 RS06900 WP 020457569.1     LRQPLESGEIISRANAKVQFPACFQLIAAMNPSPTGHYQGT..HNRTSPQQLMRYLNRLSGPFLDRFDLSIEVPLLPQG   395
NTDB id 1349 HI 1117 AAC22771.1               LRQPLESGEIISRANAKIQFPARFQLVAAMNPSPTGHYTGT..HNRTSPQQIMRYLNRLSGPFLDRFDLSIEVPLLPQG   396
consensus                                     *!*!*!****!*!! *** *!!*!******!!*!*! *  *  * * **  * !!* *!!*!*!!! !* ***  *  *
```

```
logo
```

```
NTDB id 1323 RA0C RS07335 WP 004916218.1      QLSD..KRKGESSEIIRQRVLKAREIQQERYQDLAISYNAQMGPKEIEHFCELDEVSLLLIKNAMEKLNLSARAYDRILK   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 22315 PFL RS30530 WP 011064193.1      TALNPEPQPGNDSAAAATRVAGARELQRERQG....CANAFLDLPGLRRHCKLSTTDERWLEAACERLGLSLRAAHRLLK   467
NTDB id 1397 DSB67 RS15690 WP 005535577.1     TLSEG.GDRGEPTAIVKERVNQARDCMLARSG....KVNALLGSREIEAFCPLQKSDAEFLENALHRLGLSIRAYHRIIK   467
NTDB id 1153 A1552VC RS00115 WP 000521788.1   TLANG.GDRGESTAAVRQRVWVARERMLARSG....KVNALLQSREIEQYCPLLKADAEFLESALHRLGLSIRAYHRIIK   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 22315 PFL RS30530 WP 011064193.1      VARTLADLEQAARISREHLAEALHYRPSAD..........   497
NTDB id 1397 DSB67 RS15690 WP 005535577.1     VARTIADLEGSPQIERTHLAEALGYRAMDRLLKQLTAQAV   507
NTDB id 1153 A1552VC RS00115 WP 000521788.1   VARTIADLQGEAQIARPHLAEALGYRAMDRLLKQLSAQNV   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