```
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 149714 ACU11 RS19810 WP 024712425.1 MSLALVHSRARVGVHAPEVRVEVHLSGGLPSTQMVGLPEAAVRESRERVRAALLCAQFEFPARRITINLAPADLPKEGGR   80
NTDB id 1153 A1552VC RS00115 WP 000521788.1 MGLAIIHSRASIGVQAPPVTVEVHISNGMPGFTLVGLPETTVKESRDRVRSAIINSRFEFPAKRITVNLAPADLPKEGGR   80
NTDB id 1397 DSB67 RS15690 WP 005535577.1   MGLAIIHSRASVGVQAPSVSVEVHISNGMPGFTLVGLPETTVKESKDRVRSAIVNSNFQFPAKRITVNLAPADLPKEGGR   80
NTDB id 1349 HI 1117 AAC22771.1              MSLAIVYSRASMGVQAPLVTIEVHLSNGKPGFTLVGLPEKTVKEAQDRVRSALMNAQFKYPAKRITVNLAPADLPKEGGR   80
NTDB id 1387 A4U84 RS06900 WP 020457569.1   MSLAIIYSRASIGVEAPLVTIEVHISGGSPGLTLVGLPEKSVKEAQDRVRSALMNANFDYPARRITINLAPADLPKEGGR   80
consensus                                   **!*** *****!* !* ***!!****!******!!!**  **!***!***!*** ****!***!!*!**!!*!*!*!**
```

```
logo
NTDB id 1323 RA0C RS07335 WP 004916218.1     YDLSIALGILAASGQIIAPEIERYLIMGELSLDGGLQPIKGVLPIAIRAREEGFKGIILPKQNTREAAIVNDLEVYGVEN  158
NTDB id 1271 LPP RS03220 WP 011213198.1      FDLPIALGILAASEQIPLTNLANHEFIGELALSGELRGVSAIIPAVLAAHKD.NQHLIIANANAAEASLTGHQKVFTANN  159
NTDB id 1248 GC085 RS03150 WP 011213198.1    FDLPIALGILAASEQIPLTNLANHEFIGELALSGELRGVSAIIPAVLAAHKD.NQHLIIANANAAEASLTGHQKVFTANN  159
NTDB id 149714 ACU11 RS19810 WP 024712425.1 FDLPIALGILAASGQIDRQALADYEFLGELALTGELRGIDGVLPAALAAAQA.GRRLIVPLANGAEAAIAGHVEAFTART  159
NTDB id 1153 A1552VC RS00115 WP 000521788.1 FDLPIALGILAASDQIARNKLESYEFIGELALSGEIRGVKGVLPAALAANQV.ERCLVVPHSNGDQAALVGVERHKSAQS  159
NTDB id 1397 DSB67 RS15690 WP 005535577.1   FDLPIALGILAASEQIATDKLKNYEFVGELALSGGLRTVKGVLPAALAANKK.QRHLVVPHANGDQAALVGKEQHKSAQS  159
NTDB id 1349 HI 1117 AAC22771.1              FDLPIAIGILAASDQLDASHLKQFEFVAELALTGQLRGVHGVIPAILAAQKS.KRELIIAKQNANEASLVSDQNTYFAQT  159
NTDB id 1387 A4U84 RS06900 WP 020457569.1   FDLPIAIGILAASGQIDSDKLKRIELLGELSLTGHLRGVHGAIPAVLAASKA.KRETIVPQQNANEVSLVSNTQTYCAST  159
consensus                                   *!!*!!*!!!!!!*!*    *  *****!!*!*! **** ***!* **! *   * ****  !* ** ***    *****
```

```
logo
NTDB id 1323 RA0C RS07335 WP 004916218.1     IKEVIDFFNENCPLEPTKVNTREEFHKRVNLFPFDFSEVKGQETAKRAMEVAAAGGHNIILIGPPGSGKTMLAKRIPSIL  238
NTDB id 1271 LPP RS03220 WP 011213198.1      LREVCDYLCQGTSLQSLPPKPDLL....LNNYELDWSDIKGQQHAKNAMVIAACGGHSILLSGAPGSGKTMMAKRFSTLL  235
NTDB id 1248 GC085 RS03150 WP 011213198.1    LREVCDYLCQGTSLQSLPPKPDLL....LNNYELDWSDIKGQQHAKNAMVIAACGGHSILLSGAPGSGKTMMAKRFSTLL  235
NTDB id 149714 ACU11 RS19810 WP 024712425.1 LLEVCATLNGSQKAPAAELAVQAL....GARALPDMADVRGQPHARRALEIAAAGGHHLLLVGSPGCGKTLLASRLPGLL  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 1349 HI 1117 AAC22771.1              LLDVVQFLNGQEKLPLATEIVKESAVNFSGKNTLDLTDIIGQQHAKRALTIAAAGQHNLLFLGPPGTGKTMLASRLTGLL  239
NTDB id 1387 A4U84 RS06900 WP 020457569.1   LLQVVNFLNNRDQLPIAQQLSQNIAEN.RPLVSRDLTDIIGQQHAKRALIIAASGQHNLLFLGPPGTGKTMLASRLADLL  238
consensus                                   ***!* **     *                     !**** !!*****!* *!!*! !*** *!*!!*!!!**!*!*   *!
```

```
logo
NTDB id 1323 RA0C RS07335 WP 004916218.1     PPLTLKEALETTKIHSVAGKMGAETSLMTIRPFRSPHHTISDVALVGGGSYPQPGEISLAHNGVLFLDEMPEFKRTVLEV  318
NTDB id 1271 LPP RS03220 WP 011213198.1      PELSETQALECAAINSIRGKLP.DFREWRLPPFRAPHHTASPVALVGGGNPPKPGEISLAHHGVLFLDELPEFNRQVLET  314
NTDB id 1248 GC085 RS03150 WP 011213198.1    PELSETQALECAAINSIRGKLP.DFREWRLPPFRAPHHTASPVALVGGGNPPKPGEISLAHHGVLFLDELPEFNRQVLET  314
NTDB id 149714 ACU11 RS19810 WP 024712425.1 PEASEAEALETAAITSISGRGL.NLARWRQRPYRAPHHTASAVALVGGGTHPRPGEISLAHNGVLFLDELPEWQRQTLEV  314
NTDB id 1153 A1552VC RS00115 WP 000521788.1 PEMSDEEAMETASIASLTQQEI.NQHNWKLRPFRAPHHSSSMAALVGGGTIPRPGEISLAHNGLLFLDEMPEFERKVLDS  314
NTDB id 1397 DSB67 RS15690 WP 005535577.1   PEMSDEEAMETASVASLTQSEI.NEHNWKTRPFRAPHHSSSMAALVGGGSVPRPGEISLAHNGLLFLDEMPEFDRKVLDS  314
NTDB id 1349 HI 1117 AAC22771.1              PEMTDLEAIETASVTSLVQNEL.NFHNWKQRPFRAPHHSASMPALVGGGTIPKPGEISLATNGVLFLDELPEFERKVLDA  318
NTDB id 1387 A4U84 RS06900 WP 020457569.1   PEMEDDEAIETASVTSLVQNEL.NFQNWKKRPFRSPHHSASMVALVGGGSIPKPGEISLAHNGVLFLDELPEFERKVLDA  317
consensus                                   !**** *!*!** * !*    * *   ** *!*!*!!!**! *!!!!!!* !*!!!!!!!**!*!!!!!*!!* ! *!*
```

```
logo
NTDB id 1323 RA0C RS07335 WP 004916218.1      MRQPLEDREVTISRAKFTVNYPASFMLVASMNPSPSGFFPDDPN.NTSSSFEMQRYLNKLSGPLLDRIDIHIEVQKVEFD   397
NTDB id 1271 LPP RS03220 WP 011213198.1       LREPLESGHICISRAAAQIEFPAKFQLIAAMNPCPCGQWGNSQANCMCTPDRISRYLAKLSAPLLDRIDMQVTIHALSQE   394
NTDB id 1248 GC085 RS03150 WP 011213198.1     LREPLESGHICISRAAAQIEFPAKFQLIAAMNPCPCGQWGNSQANCMCTPDRISRYLAKLSAPLLDRIDMQVTIHALSQE   394
NTDB id 149714 ACU11 RS19810 WP 024712425.1   LREPLESGLVTISRAARSVDFPARFQLVAAMNPCPCGWAGDGSGRCRCSSDSIRRYRSRISGPLLDRIDLHVEVPRLPPQ   394
NTDB id 1153 A1552VC RS00115 WP 000521788.1   LREPLESGEIVISRAQGKTRFPARFQLVGALNPSPTGYYEGSQ..ARANPQSILRYLSRLSGPLLDRFDMSIEIPALPKG   392
NTDB id 1397 DSB67 RS15690 WP 005535577.1     LREPLESGEIIISRAQGKTRFPARFQIVGALNPSPTGYYEGNQ..ARTNPQAILRYLGRLSGPLLDRFDMSLEIPALPKG   392
NTDB id 1349 HI 1117 AAC22771.1               LRQPLESGEIIISRANAKIQFPARFQLVAAMNPSPTGHYTGTH..NRTSPQQIMRYLNRLSGPFLDRFDLSIEVPLLPQG   396
NTDB id 1387 A4U84 RS06900 WP 020457569.1     LRQPLESGEIIISRANAKVQFPACFQLIAAMNPSPTGHYQGTH..NRTSPQQLMRYLNRLSGPFLDRFDLSIEVPLLPQG   395
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 149714 ACU11 RS19810 WP 024712425.1   ALRS..GNLGEDSASVRCRVVTARQRQLARGA....LPNAQLDQPDTDRHCRLQHDDQVLLERAIEHLQLSARSMHRILR   468
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 1349 HI 1117 AAC22771.1               SLQNT.GDRGETSAQVREKVLKVREIQMERAG....KINAYLNSKEIERDCKLNDKDAFFLEKALNKLGLSVRAYHRILK   471
NTDB id 1387 A4U84 RS06900 WP 020457569.1     ALQNNTDQRGETTEQARKRVLEARHLQFNRRG....KINAQLTTKEIEQDCKLTDRDALFLENALTKLGLSVRAYHRILK   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 149714 ACU11 RS19810 WP 024712425.1   VARTIADLDDSADIATRHLTEAIGYRKLDRALSAASAA..   506
NTDB id 1153 A1552VC RS00115 WP 000521788.1   VARTIADLQGEAQIARPHLAEALGYRAMDRLLKQLSAQNV   507
NTDB id 1397 DSB67 RS15690 WP 005535577.1     VARTIADLEGSPQIERTHLAEALGYRAMDRLLKQLTAQAV   507
NTDB id 1349 HI 1117 AAC22771.1               VSRTIADLQGEQQIFQPHLAEALGYRAMVRLLQKLSNM..   509
NTDB id 1387 A4U84 RS06900 WP 020457569.1     VSRTIADLAGEAQIQQPHLAEALGYRAMDRLLQRLQGES.   510
consensus                                     !*!!!!!*     **    !***!**!* *****  *
```

X non conserved

X similar

X $\geq$ 50% conserved