```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 1384 A4U84 RS08525 WP 010787006.1    LKYLLNALSPEQQPIYEESELAFVEQEQEQLNLNNDPIIQLLDNLFKFCLAQNASDIHIEPRKQKLIIRLRIDGVLHLYKS   160
NTDB id 345991 EXW49 RS20735 WP 215588496.1  ..................................MNSVELFANMIMKEACRVQASDLHIVPRQKDVAIQLRIGKDLITKRC    47
NTDB id 96 BSU 24730 NP 390353.1             ..................................MDSIEKVSKNLIEEAYLTKASDIHIVPRERDAIIHFRVDHALLKKRD    47
consensus                                                                        ***** *  ******   *!!!*!!*!! ****! *!**  !* **
```

```
logo
NTDB id 1384 A4U84 RS08525 WP 010787006.1    LSIQLASRLISRIKLLAKLDISELRQPQDGQFSFTTALADTLDFRVSSLPTIYGEKLVLRLQKNKPTSFDFLQLGFNPQQ   240
NTDB id 345991 EXW49 RS20735 WP 215588496.1  IEKEFGEKLVSHFKFLASMDIGERRKPQNGSLYLQID.GQEVYLRLSTLPTAYQESLVIRLHLQASV.QPLSHLSLFPSS   125
NTDB id 96 BSU 24730 NP 390353.1             MKKEECVRLISHFKFLSAMDIGERRKPQNGSLTLKLK.EGNVHLRMSTLPTINEESLVIRVMPQYNI.PSIDKLSLFPKT   125
consensus                                    * ** * *!*!**!*!* *!!*!*!*!!*!*** *  *  * *!*!*!!!** !*!!*!*  *  *   *  !***! *
```

```
logo
NTDB id 1384 A4U84 RS08525 WP 010787006.1    QTTLLNALKQPQGLILVTGPTGSGKSITLYSALNYLNQ.MDKHILTAEDPVEIEIDGLIQTQVNRSIQLDFSQLLRTFLR   319
NTDB id 345991 EXW49 RS20735 WP 215588496.1  AEKLLSFLKHSHGLLVFTGPTGSGKTTTMYALLEVARKWQTRRIITLEDPVEQRKDGLLQIQINEKAGITYKTGLKAILR   205
NTDB id 96 BSU 24730 NP 390353.1             GATLLSFLKHSHGMLIFTGPTGSGKTTTLYSLVQYAKKHFNRNIVTLEDPVETRDEDVLQVQVNEKAGVTYSAGLKAILR   205
consensus                                    * *!!**!!***!****!!!!!!!**!*!*******   * !*!*!!!!! * ****!*!*!********* *!***!!
```

```
logo
NTDB id 1384 A4U84 RS08525 WP 010787006.1    QDPDIIMLGEIRDEESAKMALRASQTGHLVLSTLHTNDALSAVERLLQLGIQEYEIQNSLLLVIAQRLVRKLCKKCRGVG   399
NTDB id 345991 EXW49 RS20735 WP 215588496.1  HDPDIILVGEIRDEETAKVAVRASLTGHLVMTTLHTNDAKGAILRFMDYGITRQEIEQSLLAVAAQRLVELKCPFCRGKC   285
NTDB id 96 BSU 24730 NP 390353.1             HDPDMIILGEIRDAETAEIAVRAAMTGHLVLTSLHTRDAKGAIYRLLEFGINMNEIEQTVIAIAAQRLVDLACPFCENGC   285
consensus                                    *!!!*!**!!!!!*!*!**!*!!**!!!!!***!!!*!!**!* !****!!* *!!********!!!!!** !**!** *
```

```
logo
NTDB id 1384 A4U84 RS08525 WP 010787006.1    CD.ECYQGYRG.RIGVYQCLSRTA.....KKFDKQTAYLDFSSLRESAKQKIEQQLTNETEVDRVLGYE..   461
NTDB id 345991 EXW49 RS20735 WP 215588496.1  AT.LCKSMRKVRQASIYELLYGYELKQAIKEASGEHVTYHYKTLESSVRKGYALGFLEEDVYV........   347
NTDB id 96 BSU 24730 NP 390353.1             SSVYCRQSRNTRRASVYELLYGKNLQQCIQEAKGNHANYQYQTLRQIIRKGIALGYLTTNNYDRWVYHEKD   356
consensus                                     *  !** ** *****!**!**  * * **** **** * * *!* ********** *  *** *  *
```

X non conserved

X similar

X ≥ 50% conserved