```
logo

NTDB id 108 BSU 35470 NP 391427.1          MNVPVEKNSSFSKELQQTLRSRHLLRTELSFSDEMIEW.HIKNGYITAENSISINKRRYRCNRCGQTDQRYFSFYHSSGK   79
NTDB id 615 LCA RS02545 WP 011374200.1     MG...........Q.QVIACGRQFTAAQLADTQNNNYS...LPQIKRRPAF.LRVKHRLVCQRCGQVVP.PQTC...LPD   60
NTDB id 167 SP RS11275 WP 000867616.1      MK...........V.NLDYLGRLFTENELTEEER........QLAEKLPAM.RKEKGKLFCQRCNSTIL.EEWY...LPI   55
NTDB id 277 KZH43 RS10090 WP 000867601.1   MK...........V.NLDYLGRLFTENELTEEER........QLAEKLPAM.RKEKGKLFCQRCNSTIL.EEWY...LPI   55
NTDB id 236 SPD RS10765 WP 000867601.1     MK...........V.NLDYLGRLFTENELTEEER........QLAEKLPAM.RKEKGKLFCQRCNSTIL.EEWY...LPI   55
NTDB id 202 SPR RS10250 WP 000867601.1     MK...........V.NLDYLGRLFTENELTEEER........QLAEKLPAM.RKEKGKLFCQRCNSTIL.EEWY...LPI   55
NTDB id 535 SMSK321 RS10515 WP 000867726.1 MK...........V.NPNYLGRLFTENELTKEER........QLAEKLPAM.RKEKGKLFCQRCDSAIL.DEWY...LPI   55
NTDB id 507 SM12261 RS09240 WP 000867722.1 MK...........V.NPNYLGRLFTENELTEEER........QLAEKLPAM.RKEKGKLFCQRCNSTIL.EEWY...LPI   55
NTDB id 269949 C3L41 RS04010 WP 014024622.1 ...............MDFLYGRLLLQKELTKLPD.........KATLFDGMQDVSKTVMMCNRCGKKIKKKEVL...LPV   53
NTDB id 593 KW2 RS05130 WP 021037147.1     MN...........LILENLLGHLLLEKDISAFNNFTDQVNNENKLIKIGAMTSVNANKVRCNRCGTIHIKTNVK...LPI   66
consensus                                  **           * ******************        ********* ********!*!!***** ****    ***

logo

NTDB id 108 BSU 35470 NP 391427.1          NKLYCRSCVMMGRVSEEVPLYSWKEENESNWKSIKLTWDGKLSSGQQKAANVLIEAISKKEELLIWAVCGAGKTEMLFPG   159
NTDB id 615 LCA RS02545 WP 011374200.1     GRHYCAQCLLFGRLVEGDWLYTVPECHLFENNIPKLTWEGQLTPHQEKAAQAVVEVVQTQKRHVLTAVTGAGKTEMLFQG   140
NTDB id 167 SP RS11275 WP 000867616.1      GAYYCRECLLMKRVRSDQTLYYFPQEDFPKQ..DVLKWRGQLTPFQEKVSEGLLQVVDKQKPTLVHAVTGAGKTEMIYQV   133
NTDB id 277 KZH43 RS10090 WP 000867601.1   GAYYCRECLLMKRVRSDQTLYYFPQEDFPKQ..DVLKWRGQLTPFQEKVSEGLLQAVDKQKPTLVHAVTGAGKTEMIYQV   133
NTDB id 236 SPD RS10765 WP 000867601.1     GAYYCRECLLMKRVRSDQTLYYFPQEDFPKQ..DVLKWRGQLTPFQEKVSEGLLQAVDKQKPTLVHAVTGAGKTEMIYQV   133
NTDB id 202 SPR RS10250 WP 000867601.1     GAYYCRECLLMKRVRSDQTLYYFPQEDFPKQ..DVLKWRGQLTPFQEKVSEGLLQAVDKQKPTLVHAVTGAGKTEMIYQV   133
NTDB id 535 SMSK321 RS10515 WP 000867726.1 GAYYCRECLLMKRVRSDQVLYYFPQEDFAKQ..DILKWRGQLTPFQEKVSEGLIQAVDKQEPILVHAVTGAGKTEMIYQV   133
NTDB id 507 SM12261 RS09240 WP 000867722.1 GTYYCRECLLMKRVRSDQSLYYFPQEDFPKQ..DVLKWRGQLTPFQDKVSQGLLQAVDKQEPSLVHAVTGAGKTEMIYQV   133
NTDB id 269949 C3L41 RS04010 WP 014024622.1 GAYYCPHCIQMGRVRSDEKLYHLPQEDFSAA..SFLNWQGKLTASQQHVSDSLVKLQQQQKTVLVQAVTGAGKTEMIYQS   131
NTDB id 593 KW2 RS05130 WP 021037147.1     GAFFCPTCLELGRVRSDEYFYHLPQQDFPEK..TYLRWTGKLTENQEKISDALCQQITNNQKLLVQAVTGAGKTEMIYQL   144
consensus                                  ****!**!****!******!**********  **!*!*!*!***!*******************!!*!!!!!!!****

logo

NTDB id 108 BSU 35470 NP 391427.1          IESALNQGLRVCIATPRTDVVLELAPRLKAAFQGADISALYGGSDDKGRLSPLMISTTHQLLRYKDAIDVMIIDEVDAFP   239
NTDB id 615 LCA RS02545 WP 011374200.1     ILVALQKGQRVCLAAPRVAVCLELYPRLQAAFATTSIMLMHGEQTEPYRYTQLVICTTHQLLKFYHAFDTVIVDEVDAFP   220
NTDB id 167 SP RS11275 WP 000867616.1      VAKVINAGGAVCLASPRIDVCLELYKRLQQDFSCG.IALLHGE.SEPYFRTPLVVATTHQLLKFYQAFDLLIVDEVDAFP   211
NTDB id 277 KZH43 RS10090 WP 000867601.1   VAKVINAGGAVCLASPRIDVCLELYKRLQQDFSCG.IALLHGE.SEPYFRTPLVVATTHQLLKFYQAFDLLIVDEVDAFP   211
NTDB id 236 SPD RS10765 WP 000867601.1     VAKVINAGGAVCLASPRIDVCLELYKRLQQDFSCG.IALLHGE.SEPYFRTPLVVATTHQLLKFYQAFDLLIVDEVDAFP   211
NTDB id 202 SPR RS10250 WP 000867601.1     VAKVINAGGAVCLASPRIDVCLELYKRLQQDFSCG.IALLHGE.SEPYFRTPLVVATTHQLLKFYQAFDLLIVDEVDAFP   211
NTDB id 535 SMSK321 RS10515 WP 000867726.1 VAKVINAGGAVCLASPRIDVCLELYKRLQDDFACE.ISLLYGE.SEPYFRTPLVVSTTHQLLKFYQAFDLLIVDEVDAFP   211
NTDB id 507 SM12261 RS09240 WP 000867722.1 VAKVINAGGAVCLASPRIDVCLELYKRLQKDFACE.IALLHGE.SEPYFRTPLVVATTHQLLKFYQAFDLLIVDEVDAFP   211
NTDB id 269949 C3L41 RS04010 WP 014024622.1 IDNTLKKGKAVGLTSPRIDVCLELYHRLKRDFSCP.ISLLHGK.SEKYSRSPLVIATTHQLMRFRHAFDLLILDEVDAFP   209
NTDB id 593 KW2 RS05130 WP 021037147.1     IEQILSHGGSVGLASPRIDVCIELHQRLSRDFTCQ.IPLLYHE.GDSYFRSPLVVMTSHQLLRFKEAFDLLIIDEVDAFP   222
consensus                                  *******!**!****!!**!**!!**!!* *!*** !****** ********!***!*!!!*****!*!**!*!!!!!!!
```

```
logo
NTDB id 108 BSU 35470 NP 391427.1          YSADQTLQFAVQKARKKNSTLVYLSATPPKELKRKALNGQLHSVRIPARHHRKPLPEPRF....VWCGNWKKKLNRNKIP   315
NTDB id 615 LCA RS02545 WP 011374200.1     FVDNPVLATAVEQACKPQCALLYLTATPTPAIKRAIAAKQMTVSELPLRFHGHLLPEPQRHVAFNWRAQLKKGRLPKRLE   300
NTDB id 167 SP RS11275 WP 000867616.1      YVDNPMLYHAVKNSVKENGLRIFLTATSTNELDKKVRLGELKRLNLPRRFHGNPLIIPKP....IWLSDFNRYLDKNRLS   287
NTDB id 277 KZH43 RS10090 WP 000867601.1   YVDNPMLYHAVKNSVKENGLRIFLTATSTNELDKKVRLGELKRLNLPRRFHGNPLIIPKP....IWLSDFNRYLDKNRLS   287
NTDB id 236 SPD RS10765 WP 000867601.1     YVDNPMLYHAVKNSVKENGLRIFLTATSTNELDKKVRLGELKRLNLPRRFHGNPLIIPKP....IWLSDFNRYLDKNRLS   287
NTDB id 202 SPR RS10250 WP 000867601.1     YVDNPMLYHAVKNSVKENGLRIFLTATSTNELDKKVRLGELKRLNLPRRFHGNPLIIPKP....IWLSDFNRYLDKNRLS   287
NTDB id 535 SMSK321 RS10515 WP 000867726.1 YVDNPMLYHAVKNSVKENGLRIFLTATSTDELDRKVRIGELKRLSLPRRFHGNPLIIPKP....VWLSDFNRYLEKKCLS   287
NTDB id 507 SM12261 RS09240 WP 000867722.1 YVDNPMLYHAVKNSVKENGLRIFLTATSTDELDRKVRIGELKRLSLPRRFHGNPLIIPKP....VWLSDFNHCLEKSRLS   287
NTDB id 269949 C3L41 RS04010 WP 014024622.1 FPDNEMLYFELAQARKPSSILIYLTATTTDNLEKQVKLGQIEKLQLPRRFHGFPLVLPQF....FWQSKFYKM.......   278
NTDB id 593 KW2 RS05130 WP 021037147.1     FRDNDMLYFALENAKKINGTLLYLTATSTDKLDKQIKKHEIKRLFLPRRFHGHPLVIPMF....FWKKTFYKK.......   291
consensus
```

```
logo
NTDB id 108 BSU 35470 NP 391427.1          PAVKRWIEFHVKEGRPVFLFVPSVSILEKAAACFKG..VHCRTASVHAEDKHRKEKVQQFRDGQLDLLITTTILERGVTV   393
NTDB id 615 LCA RS02545 WP 011374200.1     RDCQTYLKT.....QQILLFVPQVRLLQPVANRLSTLLPAVRIETLHANDPDQIKKITAFRAQQIQLMVTTTILERGVTF   375
NTDB id 167 SP RS11275 WP 000867616.1      PKLKSYIEKQRKTAYPLLIFASEIKKGEQLAEILQEQFPNEKIGFVSSVTEDRLEQVQAFRDGELTILISTTILERGVTF   367
NTDB id 277 KZH43 RS10090 WP 000867601.1   PKLKSYIEKQRKTAYPLLIFASEIKKGEQLAEILQEQFPNEKIGFVSSVTEDRLEQVQAFRDGELTILISTTILERGVTF   367
NTDB id 236 SPD RS10765 WP 000867601.1     PKLKSYIEKQRKTAYPLLIFASEIKKGEQLAEILQEQFPNEKIGFVSSVTEDRLEQVQAFRDGELTILISTTILERGVTF   367
NTDB id 202 SPR RS10250 WP 000867601.1     PKLKSYIEKQRKTAYPLLIFASEIKKGEQLAEILQEQFPNEKIGFVSSVTEDRLEQVQAFRDGELTILISTTILERGVTF   367
NTDB id 535 SMSK321 RS10515 WP 000867726.1 PKLKSYIEKQRKTGYPLLIFASEIKKGEQLKEILQKEFPHEKIGFVSSVTEDRLEQVQAFRDGELTILISTTILERGVTF   367
NTDB id 507 SM12261 RS09240 WP 000867722.1 PKLKSYIEKQRKTGYPLLIFASEIKKGEQLKEIIQEQFPNEKIGFVSSITENRLEQVQAFRDRELTILISTTILERGVTF   367
NTDB id 269949 C3L41 RS04010 WP 014024622.1 ......IKKQRESGFPLLIFVPEIRQGEKLCQDLQSNFPHEEIAFVASTSLERLEAVERFRQGNISILVSTTILERGVTF   352
NTDB id 593 KW2 RS05130 WP 021037147.1     ......FIEQRKTGFPLLIFVAEIDFGQDFAKNLQEKFPKEKMAFVASTTKSRKTIVEAFRKKQVSILITTSILERGVTF   365
consensus
```

```
logo
NTDB id 108 BSU 35470 NP 391427.1          PKVQTGVLGAESSIFTESALVQIAGRTGRHKEYADGDVIYFHFGKTKSMLDARKHIKEMNELAAKVECTD   463
NTDB id 615 LCA RS02545 WP 011374200.1     KNVAVLVLGAEHMVFNEAVLVQIAGRAGRHKDYAQNPVHFYYQDYTRAIKGACRQIKTQNQRGRRLQSTV   445
NTDB id 167 SP RS11275 WP 000867616.1      PCVDVFVVEANHRLFTKSSLIQIGGRVGRSMDRPTGDLLFFHDGLNASIKKAIKEIQMMNKEAGL.....   432
NTDB id 277 KZH43 RS10090 WP 000867601.1   PCVDVFVVEANHRLFTKSSLIQIGGRVGRSMDRPTGDLLFFHDGLNASIKKAIKEIQMMNKEAGL.....   432
NTDB id 236 SPD RS10765 WP 000867601.1     PCVDVFVVEANHRLFTKSSLIQIGGRVGRSMDRPTGDLLFFHDGLNASIKKAIKEIQMMNKEAGL.....   432
NTDB id 202 SPR RS10250 WP 000867601.1     PCVDVFVVEANHRLFTKSSLIQIGGRVGRSMDRPTGDLLFFHDGLNASIKKAIKEIQMMNKEAGL.....   432
NTDB id 535 SMSK321 RS10515 WP 000867726.1 PCVDVFVVEANHRLFTKSSLIQIGGRVGRSMDRPTGDLLFFHDGLNTSIKKAIKEIQQMNKEAGL.....   432
NTDB id 507 SM12261 RS09240 WP 000867722.1 PCVDVFVVEANHRLFTKSSLIQIGGRVGRSMDRPTGDLLFFHDGLNTSIKKAIKEIQQMNKEAGL.....   432
NTDB id 269949 C3L41 RS04010 WP 014024622.1 PKVDVFVFQSHHHNFTRSSLIQIAGRVGRSTERPEGKVFFFHLGKTTAMLEAYKNIRNMNKAGGFL....   418
NTDB id 593 KW2 RS05130 WP 021037147.1     SSIDVFVINSEHPNFTKSALIQMAGRVGRDSKRPTGLVSFFHSGKSLAMCQAQKEIKKMNRLGGF.....   430
consensus
```

X non conserved

X similar

X $\geq$ 50% conserved