```
logo
```

```
NTDB id 108 BSU 35470 NP 391427.1                MNVPVEKNSSFSKELQQTLRSRHLLRTELSFSDEMIEW..HIKNGYITAENSISINKRRYRCNRCGQTDQRYFSFYHSSG   78
NTDB id 615 LCA RS02545 WP 011374200.1           ............MGQQVIACGRQFTAAQLADTQNN.....NYSLPQIKRRPAFLRVKHRLVCQRCQQV.VPPQT...CLP   59
NTDB id 593 KW2 RS05130 WP 021037147.1           ...........MNLILENLLGHLLLEKDISAFNNFTDQVNNENKL.IKIGAMTSVNANKVRCNRCGTIHIKTNV...KLP   65
NTDB id 1158866 QOR44 RS01880 WP 000432961.1     ...............MENYLGRLWTKAQLSEQ.........LRKIAISLPS.FIKKGSDYICTRCSSS.VAKNC...QLP   51
NTDB id 277 KZH43 RS10090 WP 000867601.1         ............MKVNLDYLGRLFTENELTEE.........ERQLAEKLPA.MRKEKGKLFCQRCNST.ILEEW...YLP   54
NTDB id 236 SPD RS10765 WP 000867601.1           ............MKVNLDYLGRLFTENELTEE.........ERQLAEKLPA.MRKEKGKLFCQRCNST.ILEEW...YLP   54
NTDB id 202 SPR RS10250 WP 000867601.1           ............MKVNLDYLGRLFTENELTEE.........ERQLAEKLPA.MRKEKGKLFCQRCNST.ILEEW...YLP   54
NTDB id 167 SP RS11275 WP 000867616.1            ............MKVNLDYLGRLFTENELTEE.........ERQLAEKLPA.MRKEKGKLFCQRCNST.ILEEW...YLP   54
NTDB id 507 SM12261 RS09240 WP 000867722.1       ............MKVNPNYLGRLFTENELTEE.........ERQLAEKLPA.MRKEKGKLFCQRCNST.ILEEW...YLP   54
NTDB id 535 SMSK321 RS10515 WP 000867726.1       ............MKVNPNYLGRLFTENELTKE.........ERQLAEKLPA.MRKEKGKLFCQRCDSA.ILDEW...YLP   54
consensus                                                     *****  **************          **********  *********!*!!***  *****    ***
```

```
logo
```

```
NTDB id 108 BSU 35470 NP 391427.1                KNKLYCRSCVMMGRVSEEVPLYSWKEENESNWKSIKLTWDGKLSSGQQKAANVLIEAISKKEELLIWAVCGAGKTEMLFP   158
NTDB id 615 LCA RS02545 WP 011374200.1           DGRHYCAQCLLFGRLVEGDWLYTVPECHLFENNIPKLTWEGQLTPHQEKAAQAVVEVVQTQKRHVLTAVTGAGKTEMLFQ   139
NTDB id 593 KW2 RS05130 WP 021037147.1           IGAFFCPTCLELGRVRSDEYFYHLPQQDFPEKT..YLRWTGKLTENQEKISDALCQQITNNQKLLVQAVTGAGKTEMIYQ   143
NTDB id 1158866 QOR44 RS01880 WP 000432961.1     TGNYYCRECIVFGRVTSNENLYYFPQKTFSKTN..SLKWKGELTPYQNEVSEELLKGISSKENLLVHAVTGAGKTEMIYH   129
NTDB id 277 KZH43 RS10090 WP 000867601.1         IGAYYCRECLLMKRVRSDQTLYYFPQEDFPKQD..VLKWRGQLTPFQEKVSEGLLQAVDKQKPTLVHAVTGAGKTEMIYQ   132
NTDB id 236 SPD RS10765 WP 000867601.1           IGAYYCRECLLMKRVRSDQTLYYFPQEDFPKQD..VLKWRGQLTPFQEKVSEGLLQAVDKQKPTLVHAVTGAGKTEMIYQ   132
NTDB id 202 SPR RS10250 WP 000867601.1           IGAYYCRECLLMKRVRSDQTLYYFPQEDFPKQD..VLKWRGQLTPFQEKVSEGLLQAVDKQKPTLVHAVTGAGKTEMIYQ   132
NTDB id 167 SP RS11275 WP 000867616.1            IGAYYCRECLLMKRVRSDQTLYYFPQEDFPKQD..VLKWRGQLTPFQEKVSEGLLQVVDKQKPTLVHAVTGAGKTEMIYQ   132
NTDB id 507 SM12261 RS09240 WP 000867722.1       IGTYYCRECLLMKRVRSDQSLYYFPQEDFPKQD..VLKWRGQLTPFQDKVSQGLLQAVDKQEPSLVHAVTGAGKTEMIYQ   132
NTDB id 535 SMSK321 RS10515 WP 000867726.1       IGAYYCRECLLMKRVRSDQVLYYFPQEDFAKQD..ILKWRGQLTPFQEKVSEGLIQAVDKQEPILVHAVTGAGKTEMIYQ   132
consensus                                        *****!**!****!******!***********  *!*!*!*!***!*****************!!*!!!!!!!***
```

```
logo
```

```
NTDB id 108 BSU 35470 NP 391427.1                GIESALNQGLRVCIATPRTDVVLELAPRLKAAFQGADISALYGGSDDKGRLSPLMISTTHQLLRYKDAIDVMIIDEVDAF   238
NTDB id 615 LCA RS02545 WP 011374200.1           GILVALQKGQRVCLAAPRVAVCLELYPRLQAAFATTSIMLMHGEQTEPYRYTQLVICTTHQLLKFYHAFDTVIVDEVDAF   219
NTDB id 593 KW2 RS05130 WP 021037147.1           LIEQILSHGGSVGLASPRIDVCIELHQRLSRDFTC.QIPLLYHE.GDSYFRSPLVVMTSHQLLRFKEAFDLLIIDEVDAF   221
NTDB id 1158866 QOR44 RS01880 WP 000432961.1     SVAKVIDTGGSVCIASPRIDVCLELYKRLSNDFRC.AITLMHGE.SPSYQRSPLTIATTHQLLKFYHAFDLLIVDEVDAF   207
NTDB id 277 KZH43 RS10090 WP 000867601.1         VVAKVINAGGAVCLASPRIDVCLELYKRLQQDFSC.GIALLHGE.SEPYFRTPLVVATTHQLLKFYQAFDLLIVDEVDAF   210
NTDB id 236 SPD RS10765 WP 000867601.1           VVAKVINAGGAVCLASPRIDVCLELYKRLQQDFSC.GIALLHGE.SEPYFRTPLVVATTHQLLKFYQAFDLLIVDEVDAF   210
NTDB id 202 SPR RS10250 WP 000867601.1           VVAKVINAGGAVCLASPRIDVCLELYKRLQQDFSC.GIALLHGE.SEPYFRTPLVVATTHQLLKFYQAFDLLIVDEVDAF   210
NTDB id 167 SP RS11275 WP 000867616.1            VVAKVINAGGAVCLASPRIDVCLELYKRLQQDFSC.GIALLHGE.SEPYFRTPLVVATTHQLLKFYQAFDLLIVDEVDAF   210
NTDB id 507 SM12261 RS09240 WP 000867722.1       VVAKVINAGGAVCLASPRIDVCLELYKRLQKDFAC.EIALLHGE.SEPYFRTPLVVATTHQLLKFYQAFDLLIVDEVDAF   210
NTDB id 535 SMSK321 RS10515 WP 000867726.1       VVAKVINAGGAVCLASPRIDVCLELYKRLQDDFAC.EISLLYGE.SEPYFRTPLVVSTTHQLLKFYQAFDLLIVDEVDAF   210
consensus                                        ********!**!**!*!!**!**!!**!!***!** *!****** ********!***!*!!!!****!*!**!*!!!!!!
```

```
logo
```

```
NTDB id 108 BSU 35470 NP 391427.1                PYSADQTLQFAVQKARKKNSTLVYLSATPPKELKRKALNGQLHSVRIPARHHRKPLPEPRFVWCGNWKKKLNRNKIPPAV   318
NTDB id 615 LCA RS02545 WP 011374200.1           PFVDNPVLATAVEQACKPQCALLYLTATPTPAIKRAIAAKQMTVSELPLRFHGHLLPEPQRHVAFNWRAQLKKGRLPKRL   299
NTDB id 593 KW2 RS05130 WP 021037147.1           PFRDNDMLYFALENAKKINGTLLYLTATSTDKLDKQIKKHEIKRLFLPRRFHGHPLVIPMFFWKKTFYK..........   290
NTDB id 1158866 QOR44 RS01880 WP 000432961.1     PYVDNPILYQGVKQALKENGTSIFLTATSTTELERKVARKELKKLHLARRFHANPLVIPEMVWVSGIQKSLQTQKLPPKL   287
NTDB id 277 KZH43 RS10090 WP 000867601.1         PYVDNPMLYHAVKNSVKENGLRIFLTATSTNELDKKVRLGELKRLNLPRRFHGNPLIIPKPIWLSDFNRYLDKNRLSPKL   290
NTDB id 236 SPD RS10765 WP 000867601.1           PYVDNPMLYHAVKNSVKENGLRIFLTATSTNELDKKVRLGELKRLNLPRRFHGNPLIIPKPIWLSDFNRYLDKNRLSPKL   290
NTDB id 202 SPR RS10250 WP 000867601.1           PYVDNPMLYHAVKNSVKENGLRIFLTATSTNELDKKVRLGELKRLNLPRRFHGNPLIIPKPIWLSDFNRYLDKNRLSPKL   290
NTDB id 167 SP RS11275 WP 000867616.1            PYVDNPMLYHAVKNSVKENGLRIFLTATSTNELDKKVRLGELKRLNLPRRFHGNPLIIPKPIWLSDFNRYLDKNRLSPKL   290
NTDB id 507 SM12261 RS09240 WP 000867722.1       PYVDNPMLYHAVKNSVKENGLRIFLTATSTDELDRKVRIGELKRLSLPRRFHGNPLIIPKPVWLSDFNHCLEKSRLSPKL   290
NTDB id 535 SMSK321 RS10515 WP 000867726.1       PYVDNPMLYHAVKNSVKENGLRIFLTATSTDELDRKVRIGELKRLSLPRRFHGNPLIIPKPVWLSDFNRYLEKKCLSPKL   290
consensus                                        !******!********!*******!*!!** ************** ***!*!***!**!***********************
```

```
logo
```

```
NTDB id 108 BSU 35470 NP 391427.1                KRWIEFHVKEGRPVFLFVPSVSILEKAAACFKGV..HCRTASVHAEDKHRKEKVQQFRDGQLDLLITTTILERGVTVPKV   396
NTDB id 615 LCA RS02545 WP 011374200.1           ERDCQTYL.KTQQILLFVPQVRLLQPVANRLSTLLPAVRIETLHANDPDQIKKITAFRAQQIQLMVTTTILERGVTFKNV   378
NTDB id 593 KW2 RS05130 WP 021037147.1           ..KFIEQRKTGFPLLIFVAEIDFGQDFAKNLQEKFPKEKMAFVASTTKSRKTIVEAFRKKQVSILITTSILERGVTFSSI   368
NTDB id 1158866 QOR44 RS01880 WP 000432961.1     YQLINKQRQTRYPLLLFFPHISEGQVFTEILRQAFPMEKIGFVSSKSTSRLKLVQDFRDNKLSILVSTTILERGVTFPSV   367
NTDB id 277 KZH43 RS10090 WP 000867601.1         KSYIEKQRKTAYPLLIFASEIKKGEQLAEILQEQFPNEKIGFVSSVTEDRLEQVQAFRDGELTILISTTILERGVTFPCV   370
NTDB id 236 SPD RS10765 WP 000867601.1           KSYIEKQRKTAYPLLIFASEIKKGEQLAEILQEQFPNEKIGFVSSVTEDRLEQVQAFRDGELTILISTTILERGVTFPCV   370
NTDB id 202 SPR RS10250 WP 000867601.1           KSYIEKQRKTAYPLLIFASEIKKGEQLAEILQEQFPNEKIGFVSSVTEDRLEQVQAFRDGELTILISTTILERGVTFPCV   370
NTDB id 167 SP RS11275 WP 000867616.1            KSYIEKQRKTAYPLLIFASEIKKGEQLAEILQEQFPNEKIGFVSSVTEDRLEQVQAFRDGELTILISTTILERGVTFPCV   370
NTDB id 507 SM12261 RS09240 WP 000867722.1       KSYIEKQRKTGYPLLIFASEIKKGEQLKEIIQEQFPNEKIGFVSSITENRLEQVQAFRDRELTILISTTILERGVTFPCV   370
NTDB id 535 SMSK321 RS10515 WP 000867726.1       KSYIEKQRKTGYPLLIFASEIKKGEQLKEILQKEFPHEKIGFVSSVTEDRLEQVQAFRDGELTILISTTILERGVTFPCV   370
consensus                                        ****************!*************************************!!*********!*!!!!!!!****
```

```
logo
```

```
NTDB id 108 BSU 35470 NP 391427.1                QTGVLGAESSIFTESALVQIAGRTGRHKEYADGDVIYFHFGKTKSMLDARKHIKEMNELAAKVECTD   463
NTDB id 615 LCA RS02545 WP 011374200.1           AVLVLGAEHMVFNEAVLVQIAGRAGRHKDYAQNPVHFYYQDYTRAIKGACRQIKTQNQRGRRLQSTV   445
NTDB id 593 KW2 RS05130 WP 021037147.1           DVFVINSEHPNFTKSALIQMAGRVGRDSKRPTGLVSFFHSGKSLAMCQAQKEIKKMNRLGGF.....   430
NTDB id 1158866 QOR44 RS01880 WP 000432961.1     DVFVIQANHHLFTKSSLVQISGRVGRALERPEGLLYFLHDGKSKSMHQAIKEIKNMNHIGGF.....   429
NTDB id 277 KZH43 RS10090 WP 000867601.1         DVFVVEANHRLFTKSSLIQIGGRVGRSMDRPTGDLLFFHDGLNASIKKAIKEIQMMNKEAGL.....   432
NTDB id 236 SPD RS10765 WP 000867601.1           DVFVVEANHRLFTKSSLIQIGGRVGRSMDRPTGDLLFFHDGLNASIKKAIKEIQMMNKEAGL.....   432
NTDB id 202 SPR RS10250 WP 000867601.1           DVFVVEANHRLFTKSSLIQIGGRVGRSMDRPTGDLLFFHDGLNASIKKAIKEIQMMNKEAGL.....   432
NTDB id 167 SP RS11275 WP 000867616.1            DVFVVEANHRLFTKSSLIQIGGRVGRSMDRPTGDLLFFHDGLNASIKKAIKEIQMMNKEAGL.....   432
NTDB id 507 SM12261 RS09240 WP 000867722.1       DVFVVEANHRLFTKSSLIQIGGRVGRSMDRPTGDLLFFHDGLNTSIKKAIKEIQQMNKEAGL.....   432
NTDB id 535 SMSK321 RS10515 WP 000867726.1       DVFVVEANHRLFTKSSLIQIGGRVGRSMDRPTGDLLFFHDGLNTSIKKAIKEIQQMNKEAGL.....   432
consensus                                        ***!*******!****!*!**!!*!!****************** ****!***!* *!*****
```

X non conserved

X similar

X ≥ 50% conserved