```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 462 GPW51 RS00385 WP 012774894.1     ....MKAELIAVGTEILTGQIINTNAQFLSEKCAELGIDVYFHTAVGDNEGRLLSTLEVASKRSNMVVLCGGLGPTEDDL    76
NTDB id 412 SMU RS09535 WP 002262393.1       ....MKSEIIAVGTEILTGQIVNTNSQFLSEKFAELGIDVYFQTAVGDNEERLLSVLKIAKERSDLIVLCGGLGPTEDDL    76
NTDB id 170 SP RS09755 WP 000642718.1        ....MKAEIIAVGTEILTGQIVNTNAQFLSEKLAEIGVDVYFQTAVGDNEVRLLSLLEIASQRSSLVILTGGLGPTEDDL    76
NTDB id 280 KZH43 RS08670 WP 000642700.1     ....MKAEIIAVGTEILTGQIVNTNAQFLSEKLAEIGVDVYFQTAVGDNEVRLLSLLEIASQRSSLVILTGGLGATEDDL    76
NTDB id 205 SPR RS08830 WP 000642700.1       ....MKAEIIAVGTEILTGQIVNTNAQFLSEKLAEIGVDVYFQTAVGDNEVRLLSLLEIASQRSSLVILTGGLGATEDDL    76
NTDB id 239 SPD RS09270 WP 000642701.1       ....MKAEIIAVGTEILTGQIVNTNAQFLSEKLAEIGVDVYFQTAVGDNEVRLLSLLEIASQRSSLVILTGGLGATEDDL    76
NTDB id 510 SM12261 RS08320 WP 000642690.1   ....MKAEIIAVGTEILTGQIVNTNAQFLSEKLAEIGVDVYFQTAVGDNEARLLSLLEIASQRSSLVILTGGLGPTEDDL    76
NTDB id 538 SMSK321 RS11060 WP 000642686.1   ....MKAEIIAVGTEILTGQIVNTNAQFLSEKLAEIGVDVYFQTAVGDNEARLLSLLEIASQRSSLVILTGGLGPTEDDL    76
NTDB id 364485 FED51 RS12120 WP 053430980.1 ....MKAEVIAVGSELLLGQIANTNGQFLSQQLAKAGVDVFYHSVVGDNATRLQETLEIASKRSELIILTGGLGPTKDDL    76
NTDB id 124 BSU 16930 NP 389575.2            MEFPKKAEIIAVGSELLLGQIANTNAQFISKQLAEIGVNVFYHTAVGDNPERLKQVIRIAEERSDFIIFSGGLGPTKDDL    80
consensus                                        *!*!*!!!!*!*!*!!!!*!!!*!!*!***!**!**!*****!!!!* !!******!**!!******!!!!*!*!!!
```

```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 462 GPW51 RS00385 WP 012774894.1     TKQTLATFLGRNLVFDELAMAKLDRFFASRPGRVRTPNNERQAQIVEGSQALQNPAGLAVGGMIEQDGVTYIVLPGPPSE   156
NTDB id 412 SMU RS09535 WP 002262393.1       TKQTLAKFLKRELVFDKTAQERLDEFFASRPTSMRTPNNECQAQIIAGSQPLSNKTGLAVGGLLEADGVTYVVLPGPPSE   156
NTDB id 170 SP RS09755 WP 000642718.1        TKQTLAKFLGKALVFDPQAQEKLDIFFTLRPDYARTPNNERQAQIVEGAIPLPNETGLAVGGKLEVDGVTYVVLPGPPSE   156
NTDB id 280 KZH43 RS08670 WP 000642700.1     TKQTLAKFLGKALVFDPQAQEKLDIFFALRPDYARTPNNERQAQIVEGAIPLPNETGLAVGGKLEVDGVTYVVLPGPPSE   156
NTDB id 205 SPR RS08830 WP 000642700.1       TKQTLAKFLGKALVFDPQAQEKLDIFFALRPDYARTPNNERQAQIVEGAIPLPNETGLAVGGKLEVDGVTYVVLPGPPSE   156
NTDB id 239 SPD RS09270 WP 000642701.1       TKQTLAKFLGKALVFDPQAQEKLDIFFALRPDYARTPNNERQVQIVEGAIPLPNETGLAVGGKLEVDGVTYVVLPGPPSE   156
NTDB id 510 SM12261 RS08320 WP 000642690.1   TKQTLAKFLGKELVFDPQAQEKLDVFFAQRPDYARTPNNERQAQLVEGAIPLPNETGLAVGGILEVDGVTYVVLPGPPSE   156
NTDB id 538 SMSK321 RS11060 WP 000642686.1   TKQTLAKFLGKELVFDPQAQEKLDVFFAQRPDYARTPNNERQAQIVEGATPLPNETGLAVGGILEVDGVTYVVLPGPPSE   156
NTDB id 364485 FED51 RS12120 WP 053430980.1 TKEVVASFLHKELVIDEVALEQIVSFFEKRN.LPMTENNRKQALVLKEATIFQNHYGMAPGMATIHQGVTYVLLPGPPRE   155
NTDB id 124 BSU 16930 NP 389575.2            TKETIANTLGRPLVLNDEAFQSIEDYFKRTK.RTMSPNNRKQALVIEGSDVLANHFGMAPGMLTEHESRYYMLLPGPPSE   159
consensus                                    !!***!**!** !!****!******!* ********!!**!**********!**!*!*!*********!**!!!!!*!
```

```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 462 GPW51 RS00385 WP 012774894.1     LKAMFSESLLPLLSQS...QQQLYSRVLRFFGIGESQLVTVLADVIDKQTDPTLAPYAKVGEVTLRLSTKATSQEEANLR   233
NTDB id 412 SMU RS09535 WP 002262393.1       LKPMVNKELLPYLSKT...SEKLYSRVLRFFGIGESHLVTLLHDLIAEQTDPTIAPYAKTGEVTIRLSTKAHRQKEADSK   233
NTDB id 170 SP RS09755 WP 000642718.1        LKPMVLNQLLPKLM.T...GSKLYSRVLRFFGIGESQLVTILADLIDNQIDPTLAPYAKTGEVTLRLSTKASSQEEANQA   232
NTDB id 280 KZH43 RS08670 WP 000642700.1     LKPMVLNQLLPKLM.T...GSKLYSRVLRFFGIGESQLVTILADLIDNQIDPTLAPYAKTGEVTLRLSTKASSQEEANQA   232
NTDB id 205 SPR RS08830 WP 000642700.1       LKPMVLNQLLPKLM.T...GSKLYSRVLRFFGIGESQLVTILADLIDNQIDPTLAPYAKTGEVTLRLSTKASSQEEANQA   232
NTDB id 239 SPD RS09270 WP 000642701.1       LKPMVLNQLLPKLM.T...GSKLYSRVLRFFGIGESQLVTILADLIDNQIDPTLAPYAKTGEVTLRLSTKASSQEEANQA   232
NTDB id 510 SM12261 RS08320 WP 000642690.1   LKPMVLNQLLPKLM.T...GSKLHSRVLRFFGIGESQLVTILSDLIDNQTDPTLAPYAKTGEVTLRLSTKASSQEEANQV   232
NTDB id 538 SMSK321 RS11060 WP 000642686.1   LKPMVLNQLLPKLM.T...GSKLYSRVLRFFGIGESQLVTILSDLIDNQTDPTLAPYAKTGEVTLRLSTKASSQEEANQV   232
NTDB id 364485 FED51 RS12120 WP 053430980.1 MRPMVTEQVIPFLSSHVGD.VQIISRVLRFFGIGESKLETELEDLIDGQSNPTIAPLASEGEVTLRLTVKHHDETQAALL   234
NTDB id 124 BSU 16930 NP 389575.2            LRPMFENEAKPLLLKKMGSNEKIVSTVLRFFGIGESQLEADLEDIIDAQTNPTIAPLAADGEVTLRLTAKHADEKETERL   239
consensus                                    ***!******!*!* *    *****!*!!!!!!!!!!!*!***!*!*!**!**!!*!!*!**!!!!*!!**!*********
```

```
logo
NTDB id 462 GPW51 RS00385 WP 012774894.1      LNQLEEDILQHD.....KLADYFYAYGEDNSLVKTVATRLAEKRQTIAIVEQGTGGLLQAELSLALADQPYFSGGKVVGQ   308
NTDB id 412 SMU RS09535 WP 002262393.1        LDKLEKKIITID.....NLADYFYGYGEENSLPQVVFDLLKEKGKTITAAESLTAGLFQARLADFAGASDIFKGGFITYS   308
NTDB id 170 SP RS09755 WP 000642718.1         LDILENQILDCQTFEGISLRDFCYGYGEETSLASIVVEELKRQGKTIAAAESLTAGLFQATVANFSGVSSIFKGGFVTYS   312
NTDB id 280 KZH43 RS08670 WP 000642700.1      LDILENQILDCQTFEGISLRDFCYGYGEETSLASIVVEELKRQGKTIAAAESLTAGLFQATVANFSGVSSIFEGGFVTYS   312
NTDB id 205 SPR RS08830 WP 000642700.1        LDILENQILDCQTFEGISLRDFCYGYGEETSLASIVVEELKRQGKTIAAAESLTAGLFQATVANFSGVSSIFEGGFVTYS   312
NTDB id 239 SPD RS09270 WP 000642701.1        LDILENQILDCQTFEGISLRDFCYGYGEETSLASIVVEELKRQGKTIAAAESLTAGLFQATVANFSGVSSIFEGGFVTYS   312
NTDB id 510 SM12261 RS08320 WP 000642690.1    LDILENQILGRQTFEGLSLRDLCYGYGEETSLASIVVEELKRQGKTITSAESLTAGLFQARVADFSGASSIFKGGFVTYS   312
NTDB id 538 SMSK321 RS11060 WP 000642686.1    LDILENQILGRQTFEGLSLRDLCYGYGEEASLASIVVEELKKQGKTITAAESLTAGLFQATVADFSGASSIFKGGFVTYS   312
NTDB id 364485 FED51 RS12120 WP 053430980.1   LDETERKIRE.......RVGHYFYGYDE.TSLMEKLVSCLTKTGLSLASAESLTGGLFGARITNIPGASACFLAAITTYT   306
NTDB id 124 BSU 16930 NP 389575.2             LKETEAVILE.......RVGEFFYGYDD.TSLVKELSIACKEKGITISAAESFTGGLFSEWLTDHSGASKLFAGGVVCYT   311
consensus                                     !***!**!** **************!*!****!!*******************!**!*!!**************!  *******

logo
NTDB id 462 GPW51 RS00385 WP 012774894.1      LGIES.................GWLS.EEADCIRQELQADLGLAVSVLIKPESTEDNVLAKVYLTLATPSGI.SQKEIDL   369
NTDB id 412 SMU RS09535 WP 002262393.1        IEEKARMLGIPFEDLQLHGVVSAFTAEKMAERSRQLTQADLAISLTGVAGPDSLEGQPAGTVFIGLSSSKRT.MAIKVLI   387
NTDB id 170 SP RS09755 WP 000642718.1         LEEKSRMLDIPAKNLEEHGVVSEFTAQKMAEQARSKTQSDFGISLTGVAGPDSLEGHPVGTVFIGLAQDQGT.EVIKVNI   391
NTDB id 280 KZH43 RS08670 WP 000642700.1      LEEKSRMLDIPAKNLEEHGVVSEFTAQKMAEQARSKTQSDFGISLTGVAGPDSLEGHPVGTVFIGLAQDQGT.EVIKVNI   391
NTDB id 205 SPR RS08830 WP 000642700.1        LEEKSRMLDIPAKNLEEHGVVSEFTAQKMAEQARSKTQSDFGISLTGVAGPDSLEGHPVGTVFIGLAQDQGT.EVIKVNI   391
NTDB id 239 SPD RS09270 WP 000642701.1        LEEKSRMLDIPAKNLEEHGVVSEFTAQKMAEQARSKTQSDFGISLTGVAGPDSLEGHPVGTVFIGLAQDQGT.EVIKVNI   391
NTDB id 510 SM12261 RS08320 WP 000642690.1    LEEKSKMLDIPVKDLEEQGVVSEFTAQKMAEQARIKTQSDFGLSLTGVAGPDSLEGHPAGTVFIGLAQEQGT.EVIKVNI   391
NTDB id 538 SMSK321 RS11060 WP 000642686.1    LEEKSKMLDIPVKDLEEQGVVSEFTAQKMAEQARSKTQSDFGISLTGVAGPDSLEGHPAGTVFIGLAQEHGT.KVIKVNI   391
NTDB id 364485 FED51 RS12120 WP 053430980.1   NDMKQSWLNVPPHVLEQHGAVSPECAIAMAQGVKKLTKADVTISFTGVAGPSPSEGKEPGTVFIGLCFRDDEPEAITLQL   386
NTDB id 124 BSU 16930 NP 389575.2             NDVKQNVLGVKKETLDRFGAVSKECASELAKGVQKLTGSDIGISFTGVAGPDAQEGHEPGHVFIGISANGK.EEVHEFHF   390
consensus                                     *********** * ***************!*********!***********!***!******!********** *******

logo
NTDB id 462 GPW51 RS00385 WP 012774894.1      GGYSWQYLRQLACLQAWDFVRNTL...........   393
NTDB id 412 SMU RS09535 WP 002262393.1        GGRSRSDVRYIAVLHAFNLVRQTLLSH....KNLV   418
NTDB id 170 SP RS09755 WP 000642718.1         GGRSRADVRHIAVMHAFNLVRKALLSD........   418
NTDB id 280 KZH43 RS08670 WP 000642700.1      GGRSRADVRHIAVMHAFNLVRKALLSD........   418
NTDB id 205 SPR RS08830 WP 000642700.1        GGRSRADVRHIAVMHAFNLVRKALLSD........   418
NTDB id 239 SPD RS09270 WP 000642701.1        GGRSRADVRHIAVMHAFNLVRKALLSD........   418
NTDB id 510 SM12261 RS08320 WP 000642690.1    GGRSRADVRHIAVMHAFNLVRKALLSD........   418
NTDB id 538 SMSK321 RS11060 WP 000642686.1    GGRSRADVRHIAVMHAFNLVRKALLSD........   418
NTDB id 364485 FED51 RS12120 WP 053430980.1   SG.SREQIRERTLKHGCQQILNRLKRWNERSNDKV   420
NTDB id 124 BSU 16930 NP 389575.2             AG.SRTGIRKRGAKYGCHLILKLLEQK........   416
consensus                                     *!*!****!*****************
```

X non conserved

X similar

X $\geq$ 50% conserved