```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 1029 TT RS02230 WP 011228203.1          ..............MPVYQYKARDRQGRL.VEATIEAEDLRTAARLLRDRGLFVAEIKEPGKGLQAEVRIPALERGPGLK    65
NTDB id 1402 DSB67 RS12670 WP 010643257.1       .MKTI......APQLKNYRWKGINSSGKK.TSGNVLAMTEIEVRERLDAQHIKIKKLKKGSISFITKI.....SHRVKGK    67
NTDB id 1169 A1552VC RS11075 WP 000648511.1     MKATQ......TLPLKNYRWKGINSNGKK.VSGQMLAISEIEVRDKLKDQHIQIKKLKKGSVSLLARL.....THRVKSK    68
NTDB id 1112 NGFG RS09215 WP 003689811.1        .MAKNGGFSLFAKKEKRFIFEGRHSASDKLVNGEVSAFTEEEARKKLAKRGIRPLQITRVK.....TS....SKRKITQE    70
NTDB id 1113 AAA85695.1 219..1451( )            .MAKNGGFSLFAKKEKRFIFEGRHSASDKLVNGEVSAFTEEEARKKLAKRGIRPLQITRVK.....TS....SKRKITQE    70
NTDB id 1252 GC085 RS07730 WP 011213805.1       .MDKN......SPPLLTFHYQGINKAGQK.MEGDIQARSLAIAKADLRKQGIVTNKVVKKRKPLFDRK.....NKKITQA    67
NTDB id 1016 ACIAD RS01680 WP 004920476.1       MAAKK......TQVMPVFAYEGVDRKGIK.LKGELPARNMALAKVTLRKQGITIRTIREKRKNIFEGL....LKKKVKPL    69
NTDB id 1059 ABD1 RS01610 WP 000279215.1        MAVKK......AQMMPTFAYEGVDRKGVK.IKGELPAKNMALAKVTLRKQGVTVRNIREKRKNILEGL....FKKKVTTL    69
NTDB id 988843 AAGQ88 RS23145 WP 342653693.1   .MATK......AVKVSVYTWEGLDKKGVK.QKGEINGHNPALVKAQLRKQGINPTKVRKKAVSIFGS......GKKIKPL    66
NTDB id 1198 PSJM300 03950 AFN76868.1           .MAQK......AIKNSVFTWEGLDRQGAK.IKGELSGVSPALVKAQLRKQGINPQKVRKKSISLFSA......GKKIKPM    66
consensus                                        ***        *  *  * ****** * * * *** * * ****  !***** * ******  *   *       ****
```

```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 1029 TT RS02230 WP 011228203.1          DLAIFSRQLATMLGAGLTLLQALAILERQTENRKFREILKQVRTDVEGGMAFSEALSKH.KIFSRLYVNLVRAGETSGGL   144
NTDB id 1402 DSB67 RS12670 WP 010643257.1       DITIFTRQIATMLMTGVPIVQALKLVSENHKKAEMKSILMSVTRAVEAGTPMSKAMRTASTHFDPLYTDLIATGEQSGNL   147
NTDB id 1169 A1552VC RS11075 WP 000648511.1     DITILTRQLATMLTTGVPIVQALKLVGDNHRKAEMKSILAQITKSVEAGTPLSKAMRTASAHFDTLYVDLVETGEMSGNL   148
NTDB id 1112 NGFG RS09215 WP 003689811.1        DITVFTRQLSTMIKAGLPLMQAFEIVARGHGNPSMTEMLMEIRGQVEQGSSLSRAFSNHPKYFDRFYCNLVAAGETGGVL   150
NTDB id 1113 AAA85695.1 219..1451( )            DITVFTRQLSTMINAGLPLMQAFEIVARGHGNPSMTEMLMEIRGQVEQGSSLSRAFSNHPKYFDRFYCNLVAAGETGGVL   150
NTDB id 1252 GC085 RS07730 WP 011213805.1       DITVFSRQLATMIESGIPLVQAFDIVAKGQSNKRLKDLIETIKHDIETGLTLAESLIKHPLYFNELFCNLVDAGEKSGSL   147
NTDB id 1016 ACIAD RS01680 WP 004920476.1       DIAIFTRQLATMMKAGVPLVQAFEIVAEGLENPAMRDVVLGLKNEVEGGNTFAGALRKYPQYFDNLFCSLIESGEQSGSL   149
NTDB id 1059 ABD1 RS01610 WP 000279215.1        DITIFTRQLATMMKAGVPLVQGFEIVAEGLENPAMREVVLGIKGEVEGGSTFASALRKYPQHFDNLFCSLVESGEQSGAL   149
NTDB id 988843 AAGQ88 RS23145 WP 342653693.1   DIAFFSRQMATMMKAGVPLLQSFDIISEGSDNPNMRKLVDDIKQEVAAGHSFATALRQKPQYFDDLFCNLVDAGEQAGAL   146
NTDB id 1198 PSJM300 03950 AFN76868.1           DIALFTRQMATMMKAGVPLLQSFDIIGEGFDNPNMRKLVDDLKQEVAAGNSFASSLRKKPQYFDDLYCNLVDSGEQSGSL   146
consensus                                       !*****!!**!!***!****!******** *** ****** ** ****!***  **** * *!* ****!***!!**! !
```

```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 1029 TT RS02230 WP 011228203.1          DLILDRLASFLEKELELRGKIRSAMTYPVIVFVFAVGVAYFLLTGIVPQFAQILTDLGSELPLLTRFLIAVSDLLRAATL   224
NTDB id 1402 DSB67 RS12670 WP 010643257.1       SQVFERLATYREKSEQLRAKVIKALIYPAMVVLVALGVSYLMLTRVIPEFEKMFTGFGADLPAFTQMVLNLSAWTQNWGP   227
NTDB id 1169 A1552VC RS11075 WP 000648511.1     PEVFERLATYREKSEQLRAKVIKALIYPSMVVLVALGVSYLMLTMVIPEFESMFKGFGAELPWFTQQVLKLSHWVQAYSL   228
NTDB id 1112 NGFG RS09215 WP 003689811.1        ESLLDKLAIYKEKTQAIRKKVKTALTYPVSVIAVAIGLVFVMMIFVLPAFKEVYANMGAELPPLTQTVMDMSDFFVSYGW   230
NTDB id 1113 AAA85695.1 219..1451( )            ESLLDKLAIYKEKTQAIRKKVKTALTYPVSVIAVAIGLVFVMMIFVLPAFKEVYANMGAELPALTQTVMDMSDFFVSYGW   230
NTDB id 1252 GC085 RS07730 WP 011213805.1       DIMLDKVATYKEKIEIIKKKIKKALTYPIAVMVVALLVTAGLLIYVVPQFESLFKGFGADLPAMTRAVITMSEFMQAYWY   227
NTDB id 1016 ACIAD RS01680 WP 004920476.1       EIMLDRVAVYKEKSEVLKQKIKKAMKYPATVIVVAIVVTIILMVKVVPVFKDLFTSFGADLPAFTQLVVNMSNWMQDYWF   229
NTDB id 1059 ABD1 RS01610 WP 000279215.1        ETMLDRVAIYKEKSELLKQKIKKAMKYPATVIVVAIVVTIILMVKVVPVFQDLFASFGADLPAFTQMVVNMSKWMQEYWF   229
NTDB id 988843 AAGQ88 RS23145 WP 342653693.1   ESLLDRVATYKEKTEFLKAKIKKAMTYPIAVVIVAIIVSGILLIKVVPQFQSVFAGFGAKLPAFTLMVIGLSEIVQSYWY   226
NTDB id 1198 PSJM300 03950 AFN76868.1           ETLLDRVATYKEKTEALKAKIKKAMNYPIAVVLVAVIVTAILLIKVVPQFQDVFANFGAELPAFTLMVIGLSEALQAWWY   226
consensus                                       *******!***!!** ***!***!**!!* !***!************! ! **** *!**!!**!**** *!**** ***
```

```
logo

NTDB id 1029 TT RS02230 WP 011228203.1          PLLLLAVALFFAYRWYY.GTPQGRRVIDRLKLRLPVFGNLNRKTAVARFSRTLALLLSSGVNIVEALDITKGTAGNSVVE   303
NTDB id 1402 DSB67 RS12670 WP 010643257.1       FIGLSFVSLLISGKIMSQRSDSFRLLAARSSLRVPILGPVLSKAAIAKFSRTLATSFSAGIPILTALKTTSKTSGNMHYQ   307
NTDB id 1169 A1552VC RS11075 WP 000648511.1     WAFIAIAAAIFGLKALRKNSFQIRLKTSRLGLKFPIIGNVLAKASIAKFSRTLATSFAAGIPILASLKTTAKTSGNVHFE   308
NTDB id 1112 NGFG RS09215 WP 003689811.1        MVLIALGFAIYGFLKLKARSIKIQRRMDAILLRMPIFGDIVRKGTIARWGRTTATLFAAGVPLVDVLDSTAGAAGNLIYE   310
NTDB id 1113 AAA85695.1 219..1451( )            MVLIALGFAIYRFLKLKARSIKIQRRMDAILLRMPIFGDIVRKGTIARWGRTTATLFAAGVPLVDVLDSTAGAAGNLIYE   310
NTDB id 1252 GC085 RS07730 WP 011213805.1       IIFGALGGVVYSFFYAKNHSLEFAQTIDRVMLKLPVIGPILEKAAIARFARTLSITFAAGLPLVEALKSVAGATGNIIYA   307
NTDB id 1016 ACIAD RS01680 WP 004920476.1       ILILVIGAAIAGFLEARKRSKRFRDQLDRLVLRLPIVGDLVYKAIIARYSRTLATTFAAGVPLIDALASTAGATNNTVYE   309
NTDB id 1059 ABD1 RS01610 WP 000279215.1        IMIIAIGAVIAAFLEAKKRSKKFRDGLDKLALKLPIFGDLVYKAIIARYSRTLATTFAAGVPLIDALESTAGATNNVIYE   309
NTDB id 988843 AAGQ88 RS23145 WP 342653693.1   ILLGAMLVAFMAFRKAYKTSEKFRDRIDRMLLKVPVIGPLLFKSAVARFARTLSTTFAAGVPLVDALDSVAGATGNVVFR   306
NTDB id 1198 PSJM300 03950 AFN76868.1           VVLAGFVGAAYAFKQAHTRSEKFRNWFDRLMLKVPVVGDILYKSSVARFARTLSTTFAAGVPLVDALDSVAGATGNVVFR   306
consensus                                       ************** ** ** ***  ****!**!**!*** !* *!***!!*******!******!********!****

logo

NTDB id 1029 TT RS02230 WP 011228203.1          EIVEAAKLKIQQGDPLNLTLAQHPFVFPPMVSSMVAIGEETGALDTMLSKVADFYEREVDEAVASLTAAIEPLMIIFLGV   383
NTDB id 1402 DSB67 RS12670 WP 010643257.1       LAIEEVYRDTAAGMPMYIAMR.HCHVFPELVLQMVMIGEESGRLDDMLNKIAAIYEFEVDNTVDNLSKILEPLIIVFLGV   386
NTDB id 1169 A1552VC RS11075 WP 000648511.1     TAINEVYRDTAAGMPMYIAMR.NTEAFPEMVLQMVMIGEESGQLDDMLNKVATIYEFEVDNTVDNLGKILEPLIIVFLGT   387
NTDB id 1112 NGFG RS09215 WP 003689811.1        EATREIRTRVIQGLSMTSGMR.ATELFPNMMLQMSSIGEESGSLDDMLNKAAEFYEDEVDNAVGRLSAMMEPIIIVILGL   389
NTDB id 1113 AAA85695.1 219..1451( )            EATREIRTRVIQGLSMTSGMR.ATELFPNMMLQMSSIGEESGSLDDMLNKAAEFYEDEVDNAVGWLSAMMEPIIILILGL   389
NTDB id 1252 GC085 RS07730 WP 011213805.1       KATDKIREEVATGQQMFIAME.NTHLFPNMVIQMVAIGEESGALEKMLSKVADFYEEEVNNAVDALSSLLEPIIMSILGI   386
NTDB id 1016 ACIAD RS01680 WP 004920476.1       QAVLKIREDVSTGQQLNFAMR.VSNRFPTMAIQMVAIGEESGALDEMLDKVANYYESEVDHAVDGLTSMMEPLIMAILGI   388
NTDB id 1059 ABD1 RS01610 WP 000279215.1        KAVMKIREDVATGQQLQFAMR.ISNRFPSMAIQMVAIGEESGALDSMLDKVATYYENEVDNAVDGLTSMMEPLIMAILGV   388
NTDB id 988843 AAGQ88 RS23145 WP 342653693.1   NAVHKVKQDVSTGMQLNFSMR.STGVFPMLAVQMTAIGEESGALDSMLDKVATYYEEEVDNMVDSLTSLMEPMIMAVLGI   385
NTDB id 1198 PSJM300 03950 AFN76868.1           SATNKIKSDVSSGMQLNFSMR.TTGTFPSMAVQMTAIGEESGALDEMLSKVATFYEDEVDNMVDGLTALMEPMIMAVLGV   385
consensus                                        ** *** ** *!**** ***  * *!! ****!**!!!!*!*!**!! !*! *!!*!!***!* !* **!!*****!!*

   <0

logo

NTDB id 1029 TT RS02230 WP 011228203.1          IVGMIVAGMFLPLFKIIGTLSVQ   406
NTDB id 1402 DSB67 RS12670 WP 010643257.1       VVGGLVTAMYLPIFNLMSVLG..   407
NTDB id 1169 A1552VC RS11075 WP 000648511.1     VVGGLVVAMYLPIFNLMSVLG..   408
NTDB id 1112 NGFG RS09215 WP 003689811.1        VIGTLLVAMYLPLFNLGNVVA..   410
NTDB id 1113 AAA85695.1 219..1451( )            VIGTLLVAMYLPLFNLGNVVA*.   410
NTDB id 1252 GC085 RS07730 WP 011213805.1       LVGGLVVAMYLPIFKLGSAV...   406
NTDB id 1016 ACIAD RS01680 WP 004920476.1       LVGGLVIAMYLPIFQMGSVV...   408
NTDB id 1059 ABD1 RS01610 WP 000279215.1        LVGGLVIAMYLPIFQMGSVV...   408
NTDB id 988843 AAGQ88 RS23145 WP 342653693.1   IVGGLVIAMYLPIFQLGNVV...   405
NTDB id 1198 PSJM300 03950 AFN76868.1           LVGGLIIAMYLPIFQMGSVV...   405
consensus                                       **!*****!*!!*!******
```

X non conserved

X similar

X ≥ 50% conserved