```
logo
NTDB id 587 KW2 RS10850 WP 042211510.1          ....MQTDILRLLRPKGKKLALIKQAKLIQLMGNLLNNGFNLGEVINFLALSKLVEKEFVFKMHQGLSSGKSLSEILESL   76
NTDB id 976907 MGAS38289 RS00600 WP 011054115.1 MISFLRQDISIPSKLSLKKLSSKHQHKFIQLLANLLSTGFSFAEVIAFLKRSQLLQLDYVLKMEESLLKGQGLADMLSGL   80
NTDB id 395 FSA28 RS09400 WP 257638827.1        .MTFLQQDISLKEKHKQKKLKIKKQRKVIQLFNNLFTSGFNLTEIIDFLERSHLLAEIYTKKMRQGLLNGLHLAEIMSSL   79
NTDB id 386 SMU RS09030 WP 255262721.1          .MTFLQQDISLKEKHKQKKLKIKKQRKVIQLFNNLFTSGFNLTEIIDFLERSHLLAEIYTKKMRQGLLNGLHLAEIMSSL   79
NTDB id 430 SGO RS09415 WP 012130941.1          MISFLQQDISILSKQKQKKLGTSKQKQVIELFNNLFSSGFHLAETVDFLGRSALLEKNYVQQMRQGLANGQAFSEIMASL   80
NTDB id 271 KZH43 RS09260 WP 074196785.1        ......MDISQVFRLRRKKLATAKQKNIITLFNNLFSSGFHLVETISFLDRSALLDKQCVTQMRVGLSQGKSFSEMMESL   74
NTDB id 230 SPD RS09890 WP 074196785.1          ......MDISQVFRLRRKKLATAKQKNIITLFNNLFSSGFHLVETISFLDRSALLDKQCVTQMRVGLSQGKSFSEMMESL   74
NTDB id 196 SPR RS09425 WP 074196785.1          ......MDISQVFRLRRKKLATAKQKNIITLFNNLFSSGFHLVETISFLDRSALLDKQCVTQMRVGLSQGKSFSEMMESL   74
NTDB id 161 SP RS10375 WP 074196785.1           ......MDISQVFRLRRKKLATAKQKNIITLFNNLFSSGFHLVETISFLDRSALLDKQCVTQMRVGLSQGKSFSEMMESL   74
NTDB id 529 SMSK321 RS09235 WP 080550783.1      ......MDISQVFRLKRKKLATAKQKNIITLFNNLFSSGFHLVETISFLDRSALLDKQCVTQMRTDLSQGKSFSEMMESL   74
NTDB id 501 SM12261 RS00950 WP 004238896.1      ......MDISQVFRLKRKKLATAKQKNIITLFNNLFSSGFHLVETISFLDRSALLDKQCVTQMRAGLSQGKSFSEMMESL   74
consensus                                           *!!********!!!****!***!*!**!!***!!***!***!!**!*!********!* *!**!*********!
```

```
logo
NTDB id 587 KW2 RS10850 WP 042211510.1          SFSKNVVTQLALVEVHGNLVGTMQLVELHLKKQLKVKKKLIEVATYPVVLLVFLIGIMWGLKNYLLPQLDKGNNFATLLI   156
NTDB id 976907 MGAS38289 RS00600 WP 011054115.1 GFSDAILTQISLADRHGNIETTLVAIQHYLNQMARIRRKTVEVITYPLILLLFLFVMMLGLRRYLVPQLETQ.NQITYFL   159
NTDB id 395 FSA28 RS09400 WP 257638827.1        GFSDDVVTQLALSEVHGNTQKSLLKIESYLNNLILVKKKLVEVITYPIILLIFLVVIMLGLKNYLLPQLEKG.NFATRLI   158
NTDB id 386 SMU RS09030 WP 255262721.1          GFSDDVVTQLALSEVHGNTQKSLLKIESYLNNLILVKKKLVEVITYPIILLIFLVVIMLGLKNYLLPQLERG.NFATRLI   158
NTDB id 430 SGO RS09415 WP 012130941.1          GFSDAVVTQLSLAELHGNLSLALLKIEEYLDNLAKVKKKLIEVATYPMMLLGFLVLIMIGLRNYLLPQLSSQ.NFATQLI   159
NTDB id 271 KZH43 RS09260 WP 074196785.1        GCSSAIVTQLSLAEVHGNLHLSLGKIEEYLDNLAKVKKKLIEVATYPLILLGFLLLIMLGLRNYLLPQLDSS.NIATQII   153
NTDB id 230 SPD RS09890 WP 074196785.1          GCSSAIVTQLSLAEVHGNLHLSLGKIEEYLDNLAKVKKKLIEVATYPLILLGFLLLIMLGLRNYLLPQLDSS.NIATQII   153
NTDB id 196 SPR RS09425 WP 074196785.1          GCSSAIVTQLSLAEVHGNLHLSLGKIEEYLDNLAKVKKKLIEVATYPLILLGFLLLIMLGLRNYLLPQLDSS.NIATQII   153
NTDB id 161 SP RS10375 WP 074196785.1           GCSSAIVTQLSLAEVHGNLHLSLGKIEEYLDNLAKVKKKLIEVATYPLILLGFLLLIMLGLRNYLLPQLDSS.NIATQII   153
NTDB id 529 SMSK321 RS09235 WP 080550783.1      GFSSAIVTQLSLAEVHGNLHLSLGKIEEYLDNLAKVKKKLIEVATYPLILLGFLLSIMLGLRNYLLPQLDSS.NIATQII   153
NTDB id 501 SM12261 RS00950 WP 004238896.1      GFSSAIVTQLSLAEVHGNLHLSLGKIEEYLDNLAKVKKKLIEVATYPLILLGFLLLIMLGLRNYLLPQLDSS.NIATQII   153
consensus                                       **!****!!**!***!!!***********!********!**!!*!!!**!!*!!***!*!!**!!*!!!***  !**!***
```

```
logo
NTDB id 587 KW2 RS10850 WP 042211510.1          NHLPLVFFSVGALIVLLTSLSIIIFKHISALTNFTFLVKVPLVSSFIRLYLTAYFSREWGNLIAQGVELRQIIELMKKQK   236
NTDB id 976907 MGAS38289 RS00600 WP 011054115.1 NHFPAFFIGFCSGLILLFGMVWLRWRSQSRLKLYSRLSRYPFLGKLLKQYLTSYYAREWGTLIGQGLDLMTILDIMAIEK   239
NTDB id 395 FSA28 RS09400 WP 257638827.1        SNFPILFLLGCCFFILLVGIFTFFSRKISRLHLIGFCSHLPFVGKYLQLYLTAYYAREWGNLIGQGVEMAQIVRLMQDQK   238
NTDB id 386 SMU RS09030 WP 255262721.1          SNFPILFLLGCCFFILLVGIFTFFSRKISRLHLIGFCSHLPFAGKYLQLYLTAYYAREWGNLIGQGVEMAQIVRLMQDQK   238
NTDB id 430 SGO RS09415 WP 012130941.1          GHLPTIFLLTVLMLLGLTGAIYLVFKGQKRIPVYSFLARLPFVGSFVRIYLTAYYAREWGNMIGQGLELSQIFQIMQEQR   239
NTDB id 271 KZH43 RS09260 WP 074196785.1        GNLPQIFLGMVGLVSVLALLALTFYKRSSKMSVFSILARLPFIGIFVQTYLTAYYAREWGNMISQGMELTQIFQMMQEQG   233
NTDB id 230 SPD RS09890 WP 074196785.1          GNLPQIFLGMVGLVSVLALLALTFYKRSSKMSVFSILARLPFIGIFVQTYLTAYYAREWGNMISQGMELTQIFQMMQEQG   233
NTDB id 196 SPR RS09425 WP 074196785.1          GNLPQIFLGMVGLVSVLALLALTFYKRSSKMSVFSILARLPFIGIFVQTYLTAYYAREWGNMISQGMELTQIFQMMQEQG   233
NTDB id 161 SP RS10375 WP 074196785.1           GNLPQIFLGMVGLVSVLALLALTFYKRSSKMSVFSILARLPFIGIFVQTYLTAYYAREWGNMISQGMELTQIFQMMQEQG   233
NTDB id 529 SMSK321 RS09235 WP 080550783.1      GNLPQIFLGMVGLVSLLTLLALTFYKRSSKMRVFSILARIPFLGIFVQTYLTAYYAREWGNMISQGMELTQIFQIMQEQG   233
NTDB id 501 SM12261 RS00950 WP 004238896.1      GNLPQIFLGMVGFVSVGVLLALTFYKRGSKMRVFSILARIPFLGIFVQTYLTAYYAREWGNMISQGMELTQIFQIMQEQG   233
consensus                                       ***!**!********** ******** *** ********!********!!!*!**!!!!**!*!!*****!***!****
```

```
logo
NTDB id 587 KW2 RS10850 WP 042211510.1          SRIFAEVGIKLDLGLKAGQNFEQAVSHFSIFLPELSLMIEYGAIKDKLGLELSVYADECWEQFFSKIDRLMQLIQPLIFI   316
NTDB id 976907 MGAS38289 RS00600 WP 011054115.1 SSLMKELAEDIRMSLLEGQAFHIKVATYPFFKKELSLMIEYGEIKSKLGAELEIYAQESWEQFFSQLYQVTQLIQPAIFL   319
NTDB id 395 FSA28 RS09400 WP 257638827.1        SQLFREIGYDMEKALLSGQEFHQKVLDYPFFLKELSLMIEYGEVKSKLGNELEIYAEETWEHFFAKLKKATQFVQPLIFV   318
NTDB id 386 SMU RS09030 WP 255262721.1          SQLFREIGYDMEKALLSGQEFHQKVLDYPFFLKELSLMIEYGEVKSKLGNELEIYAEETWEHFFAKLKKATQFVQPLIFV   318
NTDB id 430 SGO RS09415 WP 012130941.1          SVLFQEIGQDLGQALQNGQEFSDKIASYPFFKKELSLIIEYGEVKSKLGSELEIYALKTWEEFFGRVNRTMNLIQPLVFV   319
NTDB id 271 KZH43 RS09260 WP 074196785.1        SQLFKEVGQDLAQTLKNGREFSQTIGTYPFFRKELSLIIEYGEVKSKLGSELEIYAEKTWEAFFTRVNRTMNLVQPLVFI   313
NTDB id 230 SPD RS09890 WP 074196785.1          SQLFKEVGQDLAQTLKNGREFSQTIGTYPFFRKELSLIIEYGEVKSKLGSELEIYAEKTWEAFFTRVNRTMNLVQPLVFI   313
NTDB id 196 SPR RS09425 WP 074196785.1          SQLFKEVGQDLAQTLKNGREFSQTIGTYPFFRKELSLIIEYGEVKSKLGSELEIYAEKTWEAFFTRVNRTMNLVQPLVFI   313
NTDB id 161 SP RS10375 WP 074196785.1           SQLFKEVGQDLAQTLKNGREFSQTIGTYPFFRKELSLIIEYGEVKSKLGSELEIYAEKTWEAFFTRVNRTMNLVQPLVFI   313
NTDB id 529 SMSK321 RS09235 WP 080550783.1      SQLFKEIGQDLAQSLQNGREFSQTIATYPFFKKELSLIIEYGEVKSKLGSELEIYAEKTWEAFFTRVNRTMNLVQPLVFI   313
NTDB id 501 SM12261 RS00950 WP 004238896.1      SQLFKEIGQDMAHALQNGQEFSQTIGTYPFFKKELSLIIEYGEVKSKLGSELEIYAEKTWEAFFTRVNRTMNLVQPLVFI   313
consensus                                       !****!********! *!**!**********!**!!!!*!!!!**!*!!!*!!**!!***!!*!!**********!!**!*

logo
NTDB id 587 KW2 RS10850 WP 042211510.1          FVALMIVLLYAAMLLPIYSNMGSGI   341
NTDB id 976907 MGAS38289 RS00600 WP 011054115.1 VVAVTIVMIYAAILLPIYQNMGGIF   344
NTDB id 395 FSA28 RS09400 WP 257638827.1        FVAIVIVMIYAAMLLPIYQNMEVNL   343
NTDB id 386 SMU RS09030 WP 255262721.1          FVAIVIVMIYAAMLLPIYQNMEVNL   343
NTDB id 430 SGO RS09415 WP 012130941.1          FVALMIVLLYAAMLLPLYQNMEVHL   344
NTDB id 271 KZH43 RS09260 WP 074196785.1        FVALIIVLLYAAMLMPMYQNMEVNF   338
NTDB id 230 SPD RS09890 WP 074196785.1          FVALIIVLLYAAMLMPMYQNMEVNF   338
NTDB id 196 SPR RS09425 WP 074196785.1          FVALIIVLLYAAMLMPMYQNMEVNF   338
NTDB id 161 SP RS10375 WP 074196785.1           FVALIIVLLYAAMLMPMYQNMEVNF   338
NTDB id 529 SMSK321 RS09235 WP 080550783.1      FVALIIVLLYAAMLMPMYQNMEVNF   338
NTDB id 501 SM12261 RS00950 WP 004238896.1      FVALIIVLLYAAMLMPMYQNMEVNF   338
consensus                                       *!!**!!**!!!*!*!*!*!!****
```

X non conserved

X similar

X $\geq$ 50% conserved