```
logo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
NTDB id 320 STU RS10340 WP 002949220.1          ....................................................MEQEVFVKAYEKVRPIVLKAFRQYFIQLWDQ    31
NTDB id 47 STER RS00925 WP 002949220.1          ....................................................MEQEVFVKAYEKVRPIVLKAFRQYFIQLWDQ    31
NTDB id 468 HSISS4 RS00725 WP 021143466.1       ....................................................MEQEVFVHAYEVVRPIVLKASRQYFIQLWDQ    31
NTDB id 50 STRSA0001 RS07545 WP 002885610.1     ....................................................MEQEVFVHAYEVVRPIVLKASRQYFIQLWDL    31
NTDB id 247391 CO204 RS01130 WP 002263585.1     ....................................................MEEDFEIVFNKVKPIVWKLSRYYFIKMWTR    30
NTDB id 44 SMU RS09085 WP 002263585.1           ....................................................MEEDFEIVFNKVKPIVWKLSRYYFIKMWTR    30
NTDB id 457 SSUD9 RS00080 WP 002936602.1        ......................................................MEFEKVYASVKGIVNKARKEFYIKLWDR    28
NTDB id 461 GPW51 RS00080 WP 011921639.1        ......................................................MEFEKVYASVKGIVNKARKEFYIKLWDR    28
NTDB id 454 SSU RS00080 WP 011921639.1          ......................................................MEFEKVYASVKGIVNKARKEFYIKLWDR    28
NTDB id 424 SGO RS10430 WP 012130755.1          ......................................................MKFEDVYKQVEGIVKRCYKDYYLHLWEY    28
NTDB id 423 SGO RS08370 WP 012130755.1          ......................................................MKFEDVYKQVEGIVKRCYKDYYLHLWEY    28
NTDB id 141 SP RS10155 WP 000588925.1           ........................................................MIKELYEEVQGTVYKCRNEYYLHLWEL    27
NTDB id 140 SP RS00070 WP 000588925.1           ........................................................MIKELYEEVQGTVYKCRNEYYLHLWEL    27
NTDB id 252 KZH43 RS09050 WP 000588897.1        ........................................................MIKELYEEVQGTVYKCRNEYYLHLWEL    27
NTDB id 251 KZH43 RS09050 WP 000588897.1        ........................................................MIKELYEEVQGTVYKCRNEYYLHLWEL    27
NTDB id 211 SPD RS09675 WP 000588897.1          ........................................................MIKELYEEVQGTVYKCRNEYYLHLWEL    27
NTDB id 210 SPD RS00065 WP 000588897.1          ........................................................MIKELYEEVQGTVYKCRNEYYLHLWEL    27
NTDB id 177 SPR RS09210 WP 000588897.1          ........................................................MIKELYEEVQGTVYKCRNEYYLHLWEL    27
NTDB id 176 SPR RS00065 WP 000588897.1          ........................................................MIKELYEEVQGTVYKCRNEYYLHLWEL    27
NTDB id 489 SM12261 RS01070 WP 000471940.1      ........................................................MFKELYEEVQGIVYKCRNEYYLHLWEL    27
NTDB id 488 SM12261 RS00065 WP 000471939.1      ........................................................MFKELYEEVQGIVYKCRNEYHLHLWEL    27
NTDB id 516 SMSK321 RS09125 WP 000471944.1      ........................................................MFKELYKEVQGIVYKSRNEYYLHLWEL    27
NTDB id 517 SMSK321 RS10700 WP 000471945.1      ........................................................MFKELYKEVQGIVYKSRNEYYLHLWEL    27
NTDB id 582 DLJ51 RS00505 WP 002962720.1        MDKEKLKEIFNKHSALPEEVEEFDDGMVKEVITAGLLFCLKEVL....DMDDSSFVSAFSRVEKTVSKLAKDYYIKLWTY    76
NTDB id 450 SPYM18 RS08475 WP 011018214.1       ............................MS..CCFFVVLFILGIVKKKRRLKMSIETRAAFEKVKPIILKLKRHYYIQLWDR    52
NTDB id 449 SPYM18 RS01395 WP 011018214.1       ............................MS..CCFFVVLFILGIVKKKRRLKMSIETRAAFEKVKPIILKLKRHYYIQLWDR    52
NTDB id 442 SPYM3 RS08515 WP 011106595.1        ............................MS..CCFFVVLFILGIVKKKRRLKMSIETRAVFEKVKPIILKLKRHYYIQLWDR    52
NTDB id 441 SPYM3 RS01385 WP 011106595.1        ............................MS..CCFFVVLFILGIVKKKRRLKMSIETRAVFEKVKPIILKLKRHYYIQLWDR    52
NTDB id 448 SpyM6JRS4 RS07800 WP 010921894.1    ............................MS..CCFFVVLFILGIVKKKRRLKMSIETRAAFEKVKPIILKLKRHYYIQLWDR    52
NTDB id 447 SpyM6JRS4 RS01370 WP 010921894.1    ............................MS..CCFFVVLFILGIVKKKRRLKMSIETRAAFEKVKPIILKLKRHYYIQLWDR    52
NTDB id 554 STRINF RS00370 WP 115283725.1       ......................................................MDFERYFQTVKPIILKLRRHYFVKLWDY    28
consensus                                                                                                ** *** ! *** * ****** *!*
```

```
logo
NTDB id 320 STU RS10340 WP 002949220.1      ADMEQEAMMTLYQLLKKFPDLEKDDDKLRRYFKTKFRNRLNDEVRRQESVKRQANRQCYVEISDIAFCIPNKELD.MVDR   110
NTDB id 47 STER RS00925 WP 002949220.1      ADMEQEAMMTLYQLLKKFPDLEKDDDKLRRYFKTKFRNRLNDEVRRQESVKRQANRQCYVEISDIAFCIPNKELD.MVDR   110
NTDB id 468 HSISS4 RS00725 WP 021143466.1   ADMEQEAMMTLYQLLEKFPELKSDDDKLRRYFKTKFRNRLNDEVRRQESVKRQANRQCYIEISDIAFCLPNKELD.AVDR   110
NTDB id 50 STRSA0001 RS07545 WP 002885610.1 ADMEQEAMMTLYQLLEKFPELKSDDDKLRRYFKTKFRNRLNDEVRRQESVKRQANRQCYIEISDIAFCLPNKELD.AVDR   110
NTDB id 247391 CO204 RS01130 WP 002263585.1 EDWQQEGMLILHQLLREHPELEEDDTKLYIYFKTRFSNYIKDVLRQQESQKRRFNRMSYEEVGEIEHCLSSGGMQ.LDEY   109
NTDB id 44 SMU RS09085 WP 002263585.1       EDWQQEGMLILHQLLREHPELEEDDTKLYIYFKTRFSNYIKDVLRQQESQKRRFNRMSYEEVGEIEHCLSSGGMQ.LDEY   109
NTDB id 457 SSUD9 RS00080 WP 002936602.1    DDWEQEGMMTLFELLEAQPWLVDEQVQLYCYFKVKFRNRIKDRIRKQESQKRKFDRMPHEDIHELSHAIQSPGLI.NDEL   107
NTDB id 461 GPW51 RS00080 WP 011921639.1    DDWEQEGMMTLFELLEAQPWLVDEQVQLYCYFKVKFRNRIKDRIRKQESQKRKFDRMPHEDIYELSHAIQSPGLI.NDEL   107
NTDB id 454 SSU RS00080 WP 011921639.1      DDWEQEGMMTLFELLEAQPWLVDEQVQLYCYFKVKFRNRIKDRIRKQESQKRKFDRMPHEDIYELSHAIQSPGLI.NDEL   107
NTDB id 424 SGO RS10430 WP 012130755.1      ADWRQEGMLVLYELLKSHPNLLEDQPRLYRYFKTKFRNRIHDLIRRQESQKRKLDRQPYEEVSEIGHRLRMKELY.LDEL   107
NTDB id 423 SGO RS08370 WP 012130755.1      ADWRQEGMLVLYELLKSHPNLLEDQPRLYRYFKTKFRNRIHDLIRRQESQKRKLDRQPYEEVSEIGHRLRMKELY.LDEL   107
NTDB id 141 SP RS10155 WP 000588925.1       SDWEQEGMLCLHELISREEGLVDDIPRLRKYFKTKFRNRILDYIRKQESQKRRYDKEPYEEVGEISHRISEGGLW.LDDY   106
NTDB id 140 SP RS00070 WP 000588925.1       SDWEQEGMLCLHELISREEGLVDDIPRLRKYFKTKFRNRILDYIRKQESQKRRYDKEPYEEVGEISHRISEGGLW.LDDY   106
NTDB id 252 KZH43 RS09050 WP 000588897.1    SDWDQEGMLCLHELISREEGLVDDIPRLRKYFKTKFRNRILDYIRKQESQKRRYDKEPYEEVGEISHRISEGGLW.LDDY   106
NTDB id 251 KZH43 RS09050 WP 000588897.1    SDWDQEGMLCLHELISREEGLVDDIPRLRKYFKTKFRNRILDYIRKQESQKRRYDKEPYEEVGEISHRISEGGLW.LDDY   106
NTDB id 211 SPD RS09675 WP 000588897.1      SDWDQEGMLCLHELISREEGLVDDIPRLRKYFKTKFRNRILDYIRKQESQKRRYDKEPYEEVGEISHRISEGGLW.LDDY   106
NTDB id 210 SPD RS00065 WP 000588897.1      SDWDQEGMLCLHELISREEGLVDDIPRLRKYFKTKFRNRILDYIRKQESQKRRYDKEPYEEVGEISHRISEGGLW.LDDY   106
NTDB id 177 SPR RS09210 WP 000588897.1      SDWDQEGMLCLHELISREEGLVDDIPRLRKYFKTKFRNRILDYIRKQESQKRRYDKEPYEEVGEISHRISEGGLW.LDDY   106
NTDB id 176 SPR RS00065 WP 000588897.1      SDWDQEGMLCLHELISREEGLVDDIPRLRKYFKTKFRNRILDYIRKQESQKRRYDKEPYEEVGEISHRISEGGLW.LDDY   106
NTDB id 489 SM12261 RS01070 WP 000471940.1  SDWDQEGMICLHELISREEELVEDIPRLRKYFKTKFRNRILDHIRKQESQKRRYDKEPYEEVGEISHRISEGGMW.LDEY   106
NTDB id 488 SM12261 RS00065 WP 000471939.1  SDWDQEGMICLHELISREEGIVEDIPRLRKYFKTKFRNRILDYIRKQESQKRRYDKEPYEEVGEISHRISEGGMW.LDEY   106
NTDB id 516 SMSK321 RS09125 WP 000471944.1  SDWDQEGMICLHELISKEEELAEDIPRLRKYFKTKFRNRILDYIRKQESQKRRYDKESYEEVGEISHRIGEGGLW.LDEY   106
NTDB id 517 SMSK321 RS10700 WP 000471945.1  SDWDQEGMICLHELISREEELVEDIPRLRKYFKTKFRNRILDYIRKQESQKRRYDKEAYEEVGEISHRIGEGGLW.LDDY   106
NTDB id 582 DLJ51 RS00505 WP 002962720.1    DDWRQEARIILYQLLERFPDLANDEEKLRIYFKTKFRSYVLDNIRKQESQKRAFDRMIYEEISELGHMIPSQQMD.TADY   155
NTDB id 450 SPYM18 RS08475 WP 011018214.1   DDWLQEGHIILLQLLERYPELIEEEERLYRYFKTKFSSYLKDLLRRQESQKRQFHKLAYEEIGEVAHAIPSRGLW.LDDY   131
NTDB id 449 SPYM18 RS01395 WP 011018214.1   DDWLQEGHIILLQLLERYPELIEEEERLYRYFKTKFSSYLKDLLRRQESQKRQFHKLAYEEIGEVAHAIPSRGLW.LDDY   131
NTDB id 442 SPYM3 RS08515 WP 011106595.1    DDWLQEGHIILLQLLERYPELIEEEERLYRYFKTKFSSYLKDLLRRQESQKRQFHKLAYEEIGEVAHAIPSRGLW.LDDY   131
NTDB id 441 SPYM3 RS01385 WP 011106595.1    DDWLQEGHIILLQLLERYPELIEEEERLYRYFKTKFSSYLKDLLRRQESQKRQFHKLAYEEIGEVAHAIPSRGLW.LDDY   131
NTDB id 448 SpyM6JRS4 RS07800 WP 010921894.1 DDWLQEGHIILLQLLERYPELIEEEERLYRYFKTKFSSYLKDLLRRQESQKRQFHKLAYEEIGEVAHAIPSRGLW.LDDY   131
NTDB id 447 SpyM6JRS4 RS01370 WP 010921894.1 DDWLQEGHIILLQLLERYPELIEEEERLYRYFKTKFSSYLKDLLRRQESQKRQFHKLAYEEIGEVAHAIPSRGLW.LDDY   131
NTDB id 554 STRINF RS00370 WP 115283725.1   EDWIQEGRIVFFQLLEEHPDLLNNEGKCYSYFKTKFSNHVKDIIRHQESFKRKFNRMPYEEISDISHCVPQVFFFEVEDY   108
consensus                                    !**!!*** * *!* * ******  ****!!!**!**** ! *!*!!!*!!**** *******  * *   *** ****
```

```
logo
NTDB id 320 STU RS10340 WP 002949220.1      LAYDEQLNAFREQLSSEDSLKLDRLLGGECFRGRKKMIRELRFWMVDFDPCNEED   165
NTDB id 47 STER RS00925 WP 002949220.1      LAYDEQLNAFREQLSSEDSLKLDRLLGGECFRGRKKMIRELRFWMVDFDPCNEED   165
NTDB id 468 HSISS4 RS00725 WP 021143466.1   LVYDEQLNAFRNQLSSEDATKLDRLLAGECFRGRKKMIRELKFWMVDFDPYNEDD   165
NTDB id 50 STRSA0001 RS07545 WP 002885610.1 LVYDEQLNAFRNQLSSEDATKLDRLLAGECFRGRKKMIRELKFWMVDFDPYNEDD   165
NTDB id 247391 CO204 RS01130 WP 002263585.1 ILFRDSLLAYKQGLSTEKQELFERLVAGEHFLGRQSMLKDLRKKLSDFKEK....   160
NTDB id 44 SMU RS09085 WP 002263585.1       ILFRDSLLAYKQGLSTEKQELFERLVAGEHFLGRQSMLKDLRKKLSDFKEK....   160
NTDB id 457 SSUD9 RS00080 WP 002936602.1    LMLRGALRDYRKNLSNDQLDKYEKLISGQCFNGRREMIRDLQIHLKDFR......   156
NTDB id 461 GPW51 RS00080 WP 011921639.1    LMLRGALRDYRKNLSNDQLDKYEKLISGQCFNGRREMIRDLQIHLKDFR......   156
NTDB id 454 SSU RS00080 WP 011921639.1      LMLRGALRDYRKNLSNDQLDKYEKLISGQCFNGRREMIRDLQIHLKDFR......   156
NTDB id 424 SGO RS10430 WP 012130755.1      VAFRSAMSEYRSRLSPEEAKQYERLMADERFKGRKAMLKDLSYHLRDFNPRLD..   160
NTDB id 423 SGO RS08370 WP 012130755.1      VAFRSAMSEYRSRLSPEEAKQYERLMADERFKGRKAMLKDLSYHLRDFNPRLD..   160
NTDB id 141 SP RS10155 WP 000588925.1       YLFHETLRDYRNKQSKEKQEELERVLSNERFRGRQRVLRDLRIVFKEFTIRTH..   159
NTDB id 140 SP RS00070 WP 000588925.1       YLFHETLRDYRNKQSKEKQEELERVLSNERFRGRQRVLRDLRIVFKEFTIRTH..   159
NTDB id 252 KZH43 RS09050 WP 000588897.1    YLFHETLRDYRNKQSKEKQEELERVLSNERFRGRQRVLRDLRIVFKEFTIRTH..   159
NTDB id 251 KZH43 RS09050 WP 000588897.1    YLFHETLRDYRNKQSKEKQEELERVLSNERFRGRQRVLRDLRIVFKEFTIRTH..   159
NTDB id 211 SPD RS09675 WP 000588897.1      YLFHETLRDYRNKQSKEKQEELERVLSNERFRGRQRVLRDLRIVFKEFTIRTH..   159
NTDB id 210 SPD RS00065 WP 000588897.1      YLFHETLRDYRNKQSKEKQEELERVLSNERFRGRQRVLRDLRIVFKEFTIRTH..   159
NTDB id 177 SPR RS09210 WP 000588897.1      YLFHETLRDYRNKQSKEKQEELERVLSNERFRGRQRVLRDLRIVFKEFTIRTH..   159
NTDB id 176 SPR RS00065 WP 000588897.1      YLFHETLRDYRNKQSKEKQEELERVLSNERFRGRQRVLRDLRIVFKEFTIRTH..   159
NTDB id 489 SM12261 RS01070 WP 000471940.1  YLFHETLRDYRNKQSKDKQEELERVLRHERFRGRQRVLRDLRIVFKEFDIRTH..   159
NTDB id 488 SM12261 RS00065 WP 000471939.1  YLFHETLRDYRNKQSKDKQEELERVLRHERFRGRQRVLRDLRIVFKEFDIRTH..   159
NTDB id 516 SMSK321 RS09125 WP 000471944.1  YLFHETLRDYRSKQSKDKQEELERVLRHERFRGRQRVLRDLRIVFKEFDIRTR..   159
NTDB id 517 SMSK321 RS10700 WP 000471945.1  YLFHETLRDYRSKQSKDKQEELERVLRHERFRGRQRVLRDLRIVFKEFDIRTQ..   159
NTDB id 582 DLJ51 RS00505 WP 002962720.1    CALKEKLKELKQKLAPEDYAKILLLMRGGAFKGRSAFIKDIKVEFEDFDEDN...   207
NTDB id 450 SPYM18 RS08475 WP 011018214.1   VAYQEVIASLENQLNSQERMQFKALIRGERFKGRRALLRKISPYFKEFAQQL...   183
NTDB id 449 SPYM18 RS01395 WP 011018214.1   VAYQEVIASLENQLNSQERMQFKALIRGERFKGRRALLRKISPYFKEFAQQL...   183
NTDB id 442 SPYM3 RS08515 WP 011106595.1    VAYQEVIASLENQLNSQERMQFQALIRGERFKGRRALLRKISPYFKEFAQQL...   183
NTDB id 441 SPYM3 RS01385 WP 011106595.1    VAYQEVIASLENQLNSQERMQFQALIRGERFKGRRALLRKISPYFKEFAQQL...   183
NTDB id 448 SpyM6JRS4 RS07800 WP 010921894.1 VAYQEVIASLENQLNSQERMQFQALIRGERFKGRRALLRKISPYFKEFAQQL...   183
NTDB id 447 SpyM6JRS4 RS01370 WP 010921894.1 VAYQEVIASLENQLNSQERMQFQALIRGERFKGRRALLRKISPYFKEFAQQL...   183
NTDB id 554 STRINF RS00370 WP 115283725.1   VAYQDSLACLRRTLGREDRLKLEKVIRGERFEGKKAFLKSIELYFSDFRP.....   158
consensus                                   *** * * **** ** *  * ***** ***!*!*  ******* ***!
```

X non conserved

X similar

X ≥ 50% conserved