```
logo
NTDB id 1284 ACE17W RS12370 WP 010946666.1  MRKIIAILIL..ISASLSMAYSKDNSLISVKVLPLPENRVRIDFQFSKPLKQLPASFITQKPPRLVLDFISTDMQIPSDQKTKTI   83
NTDB id 1257 GC085 RS04855 WP 163621000.1  MRKIIAILIL..ISASLSLAYSKDNSLISVKVLPLPENRVRIDFQFSKPLKQLPASFITQKPPRLVLDFISTDMQIPSDQKTKTI   83
NTDB id 1009 ACIAD RS15175 WP 004923730.1  MKQIIRQFSIGTVAYAIMQVASAQVAITNVVPMNIPGQGTEIRVMFNGLPP.QPQAYQLEQPARLILDFDKAGQKLA..KSLIPV   82
NTDB id 1039 HON27 RS01460 WP 031993779.1  MNHVFRQFSMGAVAIAIMQAASAQVSMTNIVPMQIAGQGTEIRVMFNGLPP.QPQAYQLENPSRLILDFDKAQQGLK..QSKISV   82
NTDB id 1052 ABD1 RS15850 WP 001017033.1  MNHVFRQFSMGAVAIAIMQAASAQVSMTNIVPMQIAGQGTEIRVMFNGLPP.QPQAYQLENPSRLILDFDKAQQGLK..QSKISV   82
NTDB id 66261 PCAU RS01450 WP 096372868.1  MNRIFSAFGIALWMAL.LSPMAMAASLKALDVAALPGDRLELKLTFDGPVP.EPRGYTTDQPARIALDLPGVVSQLA..NKSRDL   81
NTDB id 1193 PAKAF RS26665 WP 003161249.1  MNSGLSRLGIALLAAM.FAPALLAADLEKLDVAALPGDRVELKLQFDEPVA.APRGYTIEQPARIALDLPGVQNKLG..TKNREL   81
consensus
```

```
logo
NTDB id 1284 ACE17W RS12370 WP 010946666.1  QLGSLHSYNIVAVGDRVRAILELDRSVSYSGSTAGSIYSLVLNGKSNDLFENSKEV.............FITNQVVNAKHEIKRI  155
NTDB id 1257 GC085 RS04855 WP 163621000.1  QLGSLHSYNIVAVGDRVRAILELDRSVSYSGSTAGSVYSLVLNGKSNDLFENSKEV.............FITNQVVNAKHEIKRI  155
NTDB id 1009 ACIAD RS15175 WP 004923730.1  TTNEASSIDVSSDDKRARVVVNLKDAGAFTTRVEGNVFILKINNIQSTATPVAT....S................APAPQQGIGNI  148
NTDB id 1039 HON27 RS01460 WP 031993779.1  ATNEASSVDVTSDDQRSRLTVNLKDTGAFTTRVEGNTFILKINSAQTSNKPLPV....V................S.AQPQGVSNI  147
NTDB id 1052 ABD1 RS15850 WP 001017033.1  ATNEASSVDVTSDDQRSRLTVNLKDAGAFTTRVEGNTFILKINSAQTSNKPLPV....V................S.AQPQGVSNI  147
NTDB id 66261 PCAU RS01450 WP 096372868.1  GNGNARSVTVVESGQRTRVVVNLVALAPYSTRVAGNQLFVVIGQGATAAQSAPGQPAVAS.........GRAKAAASAGRSIRSV  157
NTDB id 1193 PAKAF RS26665 WP 003161249.1  SVGNTRSVTVVEAKDRTRLIINLTTLSSYTTRVEGNNLFVVVGNSPAGASVASTAPVKASPAPASYAQPIKPKPYVPAGRAIRNI  166
consensus
```

```
logo
NTDB id 1284 ACE17W RS12370 WP 010946666.1  DFRGIEKQGGRVLIDVSDTGIPIDVTQVGKEIVVNFLNTKIPLNLMKRYDVSDFHSPVQIITMQQEGKKVRMTILSKGDYGHFVY  240
NTDB id 1257 GC085 RS04855 WP 163621000.1  DFRGIEKQGGRVLIDVSDTGIPIDVTQVGKEIVVNFLNTKIPLNLMKRYDVSDFHSPVQIITMQQEGKKVRMTILSKGDYGHFVY  240
NTDB id 1009 ACIAD RS15175 WP 004923730.1  GFQRGAQGEGLVVIDLQGTNTPVDVQQQGSKVVVRFPGIKIPTHLARRLNTTDFATPVASIDSYNDGSNGVISIQSTGSYEYMAY  233
NTDB id 1039 HON27 RS01460 WP 031993779.1  GFQRGSQGEGLVVVDLLGSNTPVDVQQQGSKVVIRTIGTKIPTHLARRLNVNDFATPVSSIDAYNDKGVGVITIQSSGSYEYMAY  232
NTDB id 1052 ABD1 RS15850 WP 001017033.1  GFQRGSQGEGLVVVDLLGSNTPVDVQQQGSKVVIRTIGTKIPTHLARRLNVNDFATPVSSIDAYNDKGVGVITIQSSGSYEYMAY  232
NTDB id 66261 PCAU RS01450 WP 096372868.1  DFQRGEQGEGNVLIDLSDSGMSPDIQERDGKLVLTFAKSRLPEPLRVRLDVKDFATPVQFVSARAESGKAIVTIEPGGTFDYSTY  242
NTDB id 1193 PAKAF RS26665 WP 003161249.1  DFQRGEKGEGNVVIDLSDPTLSPDIQEQGGKIRLDFAKTQLPDALRVRLDVKDFATPVQFVNASAQSDRTSITIEPSGLYDYLVY  251
consensus
```

```
logo
NTDB id 1284 ACE17W RS12370 WP 010946666.1  QVNKQFMVDVFPLTAEEIRQAKLKKQVFTGKRISLNFQNISIRAVLQLLADFTGINMVVSDKVQGDITLRLNDIPWDQALDIILT  325
NTDB id 1257 GC085 RS04855 WP 163621000.1  QVNKQFMVDVFPLTAEEIRQAKLKKQVFTGKRISLNFQNISIRAVLQLLADFTGINMVVSDKVQGDITLRLNDIPWDQALDIILT  325
NTDB id 1009 ACIAD RS15175 WP 004923730.1  QAENKLTISLKRPQDNV.RLNSKNNQNYTGKKISLDFQDIEVRRVLQLLADFTNINMVTADSVQGNITLHLKDVPWDQALDIILK  317
NTDB id 1039 HON27 RS01460 WP 031993779.1  QAENKLTISLKRPQDKN.VTSLYKTPNYSGNKLSLDFQDIEVRRVLQLLADFTGINMVAADSVQGNITLRLKDVPWDQALDIILK  316
NTDB id 1052 ABD1 RS15850 WP 001017033.1  QAENKLTISLKRPQDKN.VTSLYKTPNYSGNKLSLDFQDIEVRRVLQLLADFTGINMVAADSVQGNITLRLKDVPWDQALDIILK  316
NTDB id 66261 PCAU RS01450 WP 096372868.1  QTDNKLTISVRPMTSGDLQKRNAERSAYNGEKLSLNFQDIEVRSVLQLIADFTNLNLVASDTVQGGITLRLQNVPWDQALDLVLK  327
NTDB id 1193 PAKAF RS26665 WP 003161249.1  QTDNRLTVSIKPMTTEDAERRKKDNFAYTGEKLSLNFQDIDVRSVLQLIADFTDLNLVASDTVQGNITLRLQNVPWDQALDLVLK  336
consensus
```

```
logo
NTDB id 1284 ACE17W RS12370 WP 010946666.1  TQGLDKRRKGNVMLIDTKASMDKMEEEQLKSQQTIEKLEPIRSDLIQINYAKAADIAVLIKDKQN.....................  390
NTDB id 1257 GC085 RS04855 WP 163621000.1  TQGLDKRRKGNVMLIDTKASMDKMEEEQLKSQQTIEKLEPIRSDLIQINYAKAADIAVLIKDKQN.....................  390
NTDB id 1009 ACIAD RS15175 WP 004923730.1  TKNLDKRRNGNVIWIAPVSELIKSEEDEAKAIAQSTKLAPLQTEYILLKYAKAADIEKLITQGRNSGTSNSN.........TNGS  393
NTDB id 1039 HON27 RS01460 WP 031993779.1  TKNLDKRRNGNVIWIAPVAELIKAEEEEAKAVAQSVKLAPLQTEYIQLKYAKAGDIMGLITQGSNNSNGLQHTSGGGTSTSTNLN  401
NTDB id 1052 ABD1 RS15850 WP 001017033.1  TKNLDKRRNGNVIWIAPVAELIKAEEEEAKAVAQSVKLAPLQTEYIQLKYAKAGDIMGLITQGSNNSNGLQHTSGGGTSTSTNLN  401
NTDB id 66261 PCAU RS01450 WP 096372868.1  TKGLDKRKVGNVLLVAPADEIAARERQELESQKQIADLEPLRRELLQVNYAKAAEIAKLFQSVTRA...E...............  394
NTDB id 1193 PAKAF RS26665 WP 003161249.1  TKGLDKRKLGNVLLVAPADEIAARERQELEAQKQIAELAPLRRELIQVNYAKAADIAKLFQSVTSDGGQE...............  406
consensus                                  !**!!!!* !!!***** *** * !******* ** *!*!*********!!!!**!* !*    **

logo
NTDB id 1284 ACE17W RS12370 WP 010946666.1  ...........SLLSDRGKISVDARTNTIWIQDTGTKIEEVRELIKQLDIPVKQVLIEARIVEVTKDFSQDIGIRWGVSRPTHL.  463
NTDB id 1257 GC085 RS04855 WP 163621000.1  ...........SLLSDRGKISVDARTNTIWIQDTGTKIEEVRELIKQLDIPVKQVLIEARIVEVTKDFSQDIGIRWGVSRPTHL.  463
NTDB id 1009 ACIAD RS15175 WP 004923730.1  ATVEPLGDSVGTLLSPRGTISLDPRTNTLIINDTSQKIDQIRKMIDLLDIPVKQVMIEARIVRATTSFSKEMGVKWGILSQGINQ  478
NTDB id 1039 HON27 RS01460 WP 031993779.1  TGVDSLGNNVGSLLSPRGTITQDDRTNTLIINDTAQSIDQIRKMIDLLDVQVKQVMVEARIVRASTSFTKELGVKWGILSQGITN  486
NTDB id 1052 ABD1 RS15850 WP 001017033.1  TGVDSLGNNVGSLLSPRGTITQDDRTNTLIINDTAQSIDQIRKMIDLLDVQVKQVMVEARIVRASTSFTKELGVKWGILSQGITN  486
NTDB id 66261 PCAU RS01450 WP 096372868.1  ...........DKSDERGSITVDERTNNIIAYQTRERLDELRRIVSQLDIPVRQVMIEARIVEANVDYDKSLGVRWGGSIQNQGN  468
NTDB id 1193 PAKAF RS26665 WP 003161249.1  ...........GKEGGRGSITVDDRTNSIIAYQPQERLDELRRIVSQLDIPVRQVMIEARIVEANVGYDKSLGVRWGGAYH.KGN  479
consensus                                             **** !!*!**!*!!!*******  ******!***  *!!**!*!!**!!!!!***   *****!**!!*   *    *

logo
NTDB id 1284 ACE17W RS12370 WP 010946666.1  .SGTLEGANELA...........RG.TAPANVVPL.....ERRLNLDLAAAPLTGATPASVGIALAKL.NDNILLDLELSALESE  529
NTDB id 1257 GC085 RS04855 WP 163621000.1  .SGTLEGANELA...........RG.TAPANVVPL.....ERRLNLDLAAVPLTGATPASVGIALAKL.NDNILLDLELSALESE  529
NTDB id 1009 ACIAD RS15175 WP 004923730.1  NSNLLVGGSETTLWNLRNPDS.N.....GTYTIER.....PDNLNVDLG.....VITTGASSIAFGLISLSDFMLDLELSALQAD  547
NTDB id 1039 HON27 RS01460 WP 031993779.1  NNNLLVGGSETTLWNLREPKK.DETTGGYKYTIER.....PDNLNVDLG.....VSNP.AGSIAFGLISMSDFMLDLELSALQAD  559
NTDB id 1052 ABD1 RS15850 WP 001017033.1  NNNLLVGGSETTLWNLREPKK.DETTGGYKYTIER.....PDNLNVDLG.....VSNP.AGSIAFGLISMSDFMLDLELSALQAD  559
NTDB id 66261 PCAU RS01450 WP 096372868.1  WNASGVSN.................GTNGSSTIGTPGSTSSNSPFVDLG.....TTAN.TSGLGIAFI.TDNVLLDLELTAMEKT  529
NTDB id 1193 PAKAF RS26665 WP 003161249.1  WSGYGKDG...NI.GIKDEDGMNCGPIAGSCTFPTTGTSKSPSPFVDLG.....AKDA.TSGIGIGFI.TDNIILDLQLSAMEKT  553
consensus                                   ** **** *  *  **          *   **          ***!!*      * * * ***** *   ****!!!*!*!** *

logo
NTDB id 1284 ACE17W RS12370 WP 010946666.1  GRAELISSPRLITTNQQAAVIESGEEIPYQEATSSGA...TAVAFKKAVLSLKVTPQITPDGKILMDLQINQDTPSPQ.TFLGVP  610
NTDB id 1257 GC085 RS04855 WP 163621000.1  GRAELISSPRLITTNQQAAVIESGEEIPYQEATSSGA...TAVAFKKAVLSLKVTPQITPDGKILMDLQINQDTPSPQ.TFLGVP  610
NTDB id 1009 ACIAD RS15175 WP 004923730.1  GYGEVISTPKVMSADKQKAKVATGVEVPYQSTTNSAAGSTATTSFKEALLSLEVTPNITPDGKILMELNIANDSINSY.AQNGEA  631
NTDB id 1039 HON27 RS01460 WP 031993779.1  GYGEVISTPKVMTADKQTAKVATGQQVPYQSTTNSAAGSTATTSFKDALLSLNVTPSITPDGKIQMKLDISKDSVAGA.APNGEL  643
NTDB id 1052 ABD1 RS15850 WP 001017033.1  GYGEVISTPKVMTADKQTAKVATGQQVPYQSTTNSAAGSTATTSFKDALLSLNVTPSITPDGKIQMKLDISKDSVAGA.APNGEL  643
NTDB id 66261 PCAU RS01450 WP 096372868.1  GNGEIVSQPKVVTSDKETAKILKGTEIPYQEAASSGA...TSVSFKEASLSLEVTPQITPDNRIIMEVKVTKDEPDYLNKVQDVP  611
NTDB id 1193 PAKAF RS26665 WP 003161249.1  GNGEIVSQPKVVTSDKETAKILKGSEVPYQEASSSGA...TSTSFKEAALSLEVTPQITPDNRIIVEVKVTKDAPDYQNMLNGVP  635
consensus                                  ! *!**!*!*****!****!** *! **!!!****!*!    ****!!*!*!!! !!!*!!!!**!**** ***!**      ****
```

```
logo
                                                  AIITKEIQTNVLVNNGQTIVLGGIYKQDKNKVINRIPFFGELPVVGILFSNRQITLKNEELLIFITPRIITNALSITTIEGREKD
NTDB id 1284 ACE17W RS12370 WP 010946666.1  AIITKEIQTNVLVNNGQTIVLGGIYKQDKNKVINRIPFFGELPVVGILFSNRQITLKNEELLIFITPRIITNALSITTIEGREKD   695
NTDB id 1257 GCO85 RS04855 WP 163621000.1  AIITKEIQTNVLVNNGQTIVLGGIYKQDKNKVINRIPFFGELPVVGILFSNRQITLKNEELLIFITPRIITNALSITTIEGREKD   695
NTDB id 1009 ACIAD RS15175 WP 004923730.1  ILNKNTINTNVLVNNGETVVLGGVFEQTTNNAVTKVPFLGDLPYVGRLFKKTAKSEAKNELLIFVTPRIVNDTIVGNH.......   709
NTDB id 1039 HON27 RS01460 WP 031993779.1  ILNKNNINTNVLVDNGETVILGGVFEQTTMNSQTKVPFFGDIPVVGRLFRKDVKSDDKQELLIFVTPRIVNDTLARNH.......   721
NTDB id 1052 ABD1 RS15850 WP 001017033.1   ILNKNNINTNVLVDNGETVILGGVFEQTTMNSQTKVPFFGDIPVVGRLFRKDVKSDDKQELLIFVTPRIVNDTLARNH.......   721
NTDB id 66261 PCAU RS01450 WP 096372868.1  PIKKNEVNAKVLINDGETIVIGGVFSNTQSKVVDKVPFLGDVPYLGRLFRRDVVSEKKSELLVFLTPRIMNNQAIAVSR......   690
NTDB id 1193 PAKAF RS26665 WP 003161249.1  PINKNEVNAKILVNDGETIVIGGVFSNEQSKSVEKVPFLGELPYLGRLFRRDTVTDRKNELLVFLTPRIMNNQAIAIGR......   714
consensus                                   *********!***!*!***!!** **   * * **!!*!**!**!*!!*** ******!!!*!*!!!!*** *
```

```
logo
                                          VYK
NTDB id 1284 ACE17W RS12370 WP 010946666.1  VYK   698
NTDB id 1257 GCO85 RS04855 WP 163621000.1  VYK   698
NTDB id 1009 ACIAD RS15175 WP 004923730.1  ...   709
NTDB id 1039 HON27 RS01460 WP 031993779.1  ...   721
NTDB id 1052 ABD1 RS15850 WP 001017033.1   ...   721
NTDB id 66261 PCAU RS01450 WP 096372868.1  ...   690
NTDB id 1193 PAKAF RS26665 WP 003161249.1  ...   714
consensus
```

X non conserved
X similar
X $\geq$ 50% conserved