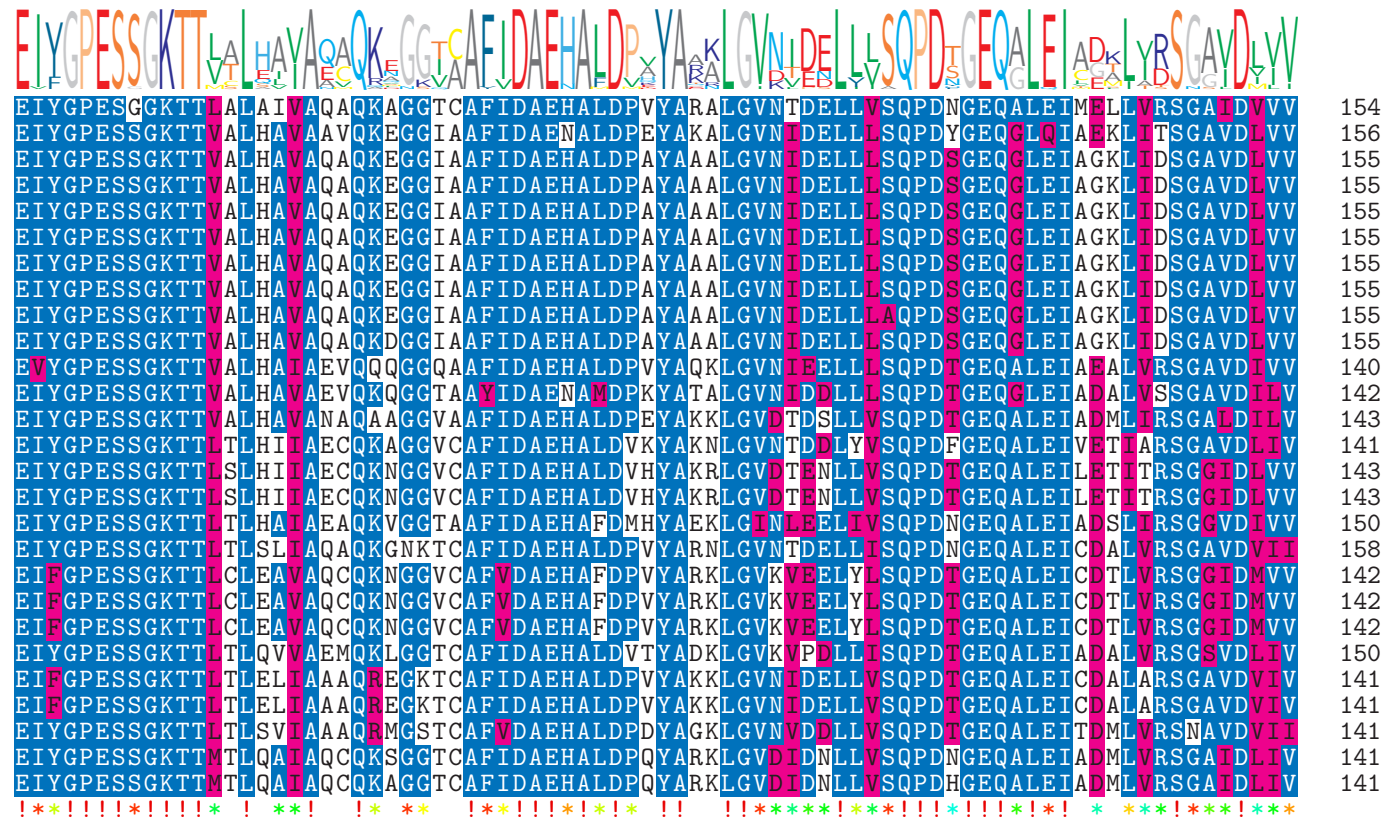


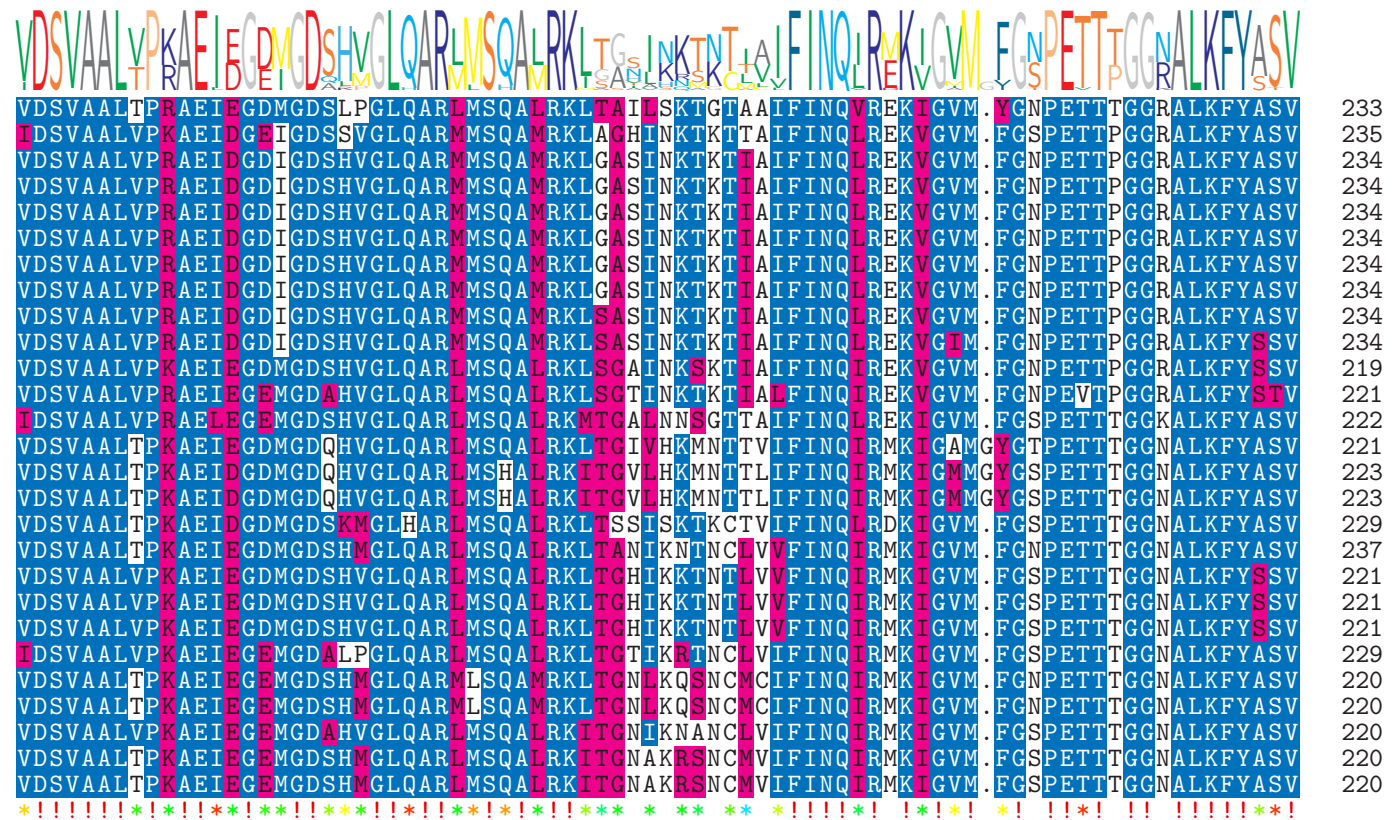
logo

NTDB id 1313 DR RS12030 WP 010888966.1	.MSKD...ATKEISAPTDAKERSKATETAMSQIEKAFGKGSIMKLGAE.SKLDVQVVSTGSLSLDLALGVGGIPRGRIT	74
NTDB id 600 KW2 RS01765 WP 011675413.1	MATKK...KTNFDDITKKYGAERDKALADALALIEKDFGKGSIMRLGEA.ANQKVSVVSSGSLALDIALGAGGYPKGRIV	76
NTDB id 269 KZH43 RS08665 WP 001085462.1	.MAKK...PKKLEEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRII	75
NTDB id 228 SPD RS09265 WP 001085462.1	.MAKK...PKKLEEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRIT	75
NTDB id 194 SPR RS08825 WP 001085462.1	.MAKK...PKKLEEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRII	75
NTDB id 159 SP RS09750 WP 001085462.1	.MAKK...PKKLEEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRIT	75
NTDB id 499 SM12261 RS08315 WP 078228268.1	.MAKK...PKKLDEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRIT	75
NTDB id 527 SMSK321 RS11065 WP 001085454.1	.MAKK...PKKLDEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRII	75
NTDB id 453 Spy49 1753c ACI62003.1	.MAKK...LKKNEEITKKFGDERRKALDDALKNIEKDFGKGAVMRLGER.AEQKVQVMSSGSLALDIALGAGGYPKGRIT	75
NTDB id 408 SMU RS09530 WP 002262392.1	.MAKR...IKKTEEITKKFGDERKKALDDALKNIEKDFGKGAVMRLGER.AEQKVQVMSSGSLALDIALGAGGYPKGRIV	75
NTDB id 115 BSU 16940 NP 389576.2	MSDRQAALDMALKQIEKQFGKGSIMKLGEK.TDTRISTVPSGSLALDTALGIGGYPRGRIT	60
NTDB id 625 LCA RS02525 WP 011374196.1	MAKDERQAALDAALKKIEKNFGKGSIMRMGEK.VDTQVSTVSSGSLALDEALGVGGYPGRIV	62
NTDB id 362863 FCV16 RS13630 WP 003875210.1	MTQAPDREKALELAMAQIEKSYGKGSVMRLGDE.MRQPISVIPTGSTALDVALGIGGLPRGRVV	63
NTDB id 1245 Cj1673c YP 002345041.1	MDDNKRKSLDAALKSLDKTFGKGTILRLGDK.EVEQIDSIGTGSVGLDLALGIGGVPKGRIT	61
NTDB id 1211 C694 RS00795 WP 000963128.1	MAIDEDKKQKATISLAIKQIDKVFVGKGAIVRLGDK.QVEKIDSISTGSLGLDLALGIGGVPKGRIT	63
NTDB id 1214 NCTC11637 00359 SQJ03206.1	MAIDEDKKQKATISLAIKQIDKVFVGKGAIVRLGDK.QVEKIDAISTGSLGLDLALGIGGVPKGRIT	63
NTDB id 1334 RAOC RS04870 WP 004918236.1	MAKTETTSPNDKKKKALAAVLEKLDKTYGKGTVMKLGDTGVDHNIIEVIPSGSLGLDLALGVGGYPKGRIV	70
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.MAENKKSSKNNTVVVKQVEPEQKKQKALEAALAQIEKQFGKGSIMKLGQT.EQLDIESVSTGSLGLDLALGIGGLPMGRIV	78
NTDB id 1130 NGFG RS03960 WP 003688695.1	MSDDKSKALAAALAQIEKSFGKGAIMKMDGSQQUEENLEVISTGSLGLDLALGVGGLPRGRIV	62
NTDB id 1124 NGFG RS03960 WP 003688695.1	MSDDKSKALAAALAQIEKSFGKGAIMKMDGSQQUEENLEVISTGSLGLDLALGVGGLPRGRIV	62
NTDB id 1123 OK783 RS03845 WP 003688695.1	MSDDKSKALAAALAQIEKSFGKGAIMKMDGSQQUEENLEVISTGSLGLDLALGVGGLPRGRIV	62
NTDB id 1427 RS RS02760 WP 011000510.1	.MEDG.....KKAASMSAEKQKALAAALAQIEKQFGKGSIMKMGDA.EVEPVQVVSTGSLGLDVALGVGGLPRGRVV	70
NTDB id 1165 A1552VC RS01565 WP 000344154.1	MDENKKKALAAALGQIEKQFGKGSIMRLGDN.RAMDVETISTGSLSLDIALGAGGLPMGRIV	61
NTDB id 1142 GTF74 RS11550 WP 000344154.1	MDENKKKALAAALGQIEKQFGKGSIMRLGDN.RAMDVETISTGSLSLDIALGAGGLPMGRIV	61
NTDB id 1205 PSJM300 05545 AFN77183.1	MDENKKRALAAALGQIEKQFGKGAVMRMGDH.DRQAIPSIISTGSLGLDIALGIGGLPKGRIV	61
NTDB id 1074 ABD1 RS10195 WP 000344167.1	MDENKSKALQAALSQIEKQFGKNTVMRLGDN.TVQAVEAVSTGSLTLDIALGIGGLPKGRIT	61
NTDB id 1022 ACIAD RS06390 WP 004925639.1	MDDNKSALQAALSQIEKQFGKNTVMRLGDN.TVQAVEAVSTGSLTLDIALGIGGLPKGRIV	61
consensus	*** **	

NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 115 BSU 16940 NP 389576.2
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 362863 FCV16 RS13630 WP 003875210.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
NTDB id 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 1205 PSJM300 05545 AFN77183.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
consensus



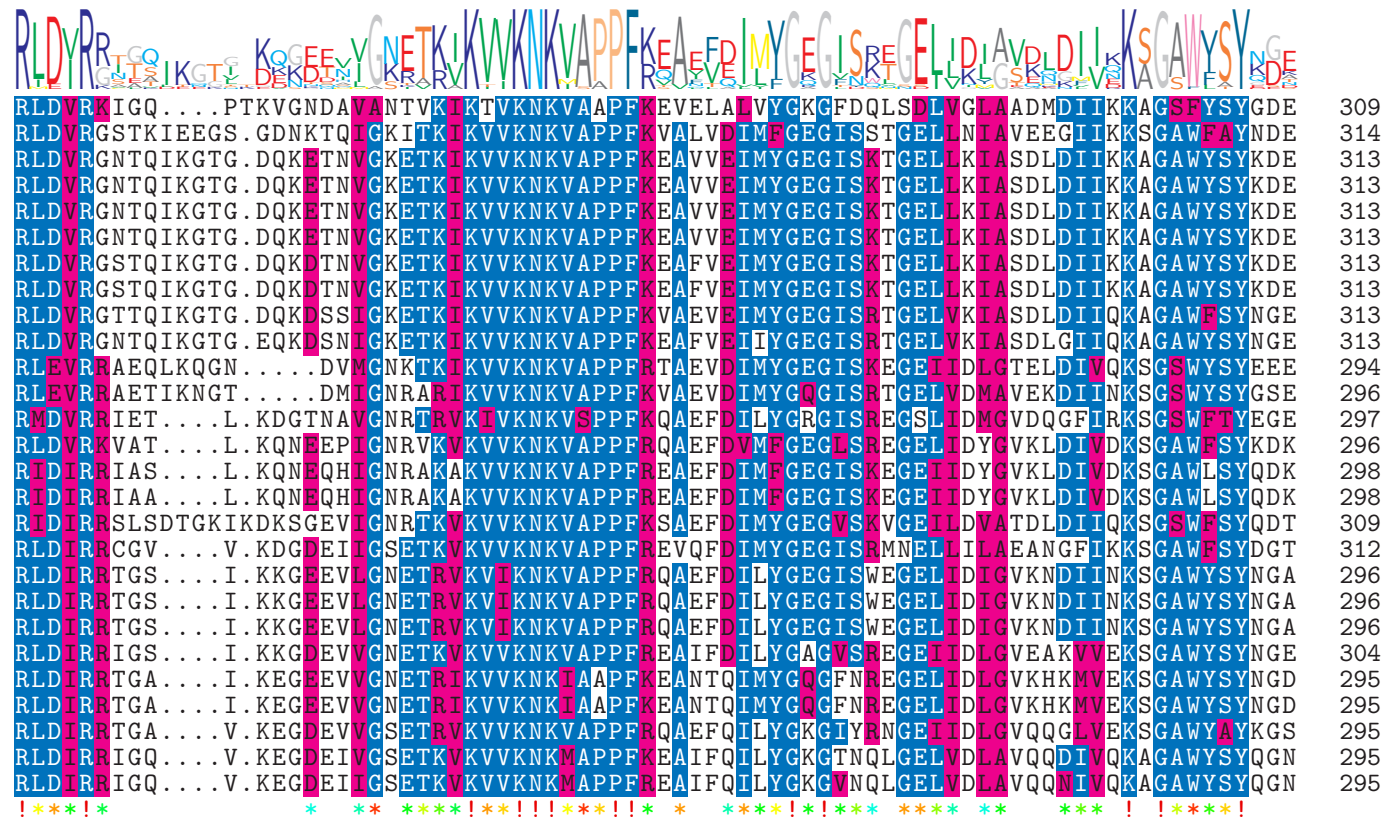
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 115 BSU 16940 NP 389576.2
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 362863 FCV16 RS13630 WP 003875210.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
NTDB id 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 1205 PSJM300 05545 AFN77183.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
consensus



```

NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 115 BSU 16940 NP 389576.2
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 362863 FCV16 RS13630 WP 003875210.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1334 RA0C RS04870 WP 004918236.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
NTDB id 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 1205 PSJM300 05545 AFN77183.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
consensus

```



logo

NTDB id 1313 DR RS12030 WP 010888966.1	RIGQGKEKTIAYIAERP	MEQEIRDRVMAAIRAGNAGEAPALAPAP.....AAPEAAEA.....	363			
NTDB id 600 KW2 RS01765 WP 011675413.1	KIGQGAEEKAKNYLKEHQDV	FEIDHKKVRAAHGLDDSEVAETEEETTASKT.KAKAKKEEKAVETEEIELELED.....	387			
NTDB id 269 KZH43 RS08665 WP 001085462.1	KIGQGS	ENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE.....PKKEEA..VNEEVPLDLGDELEIEI	386			
NTDB id 228 SPD RS09265 WP 001085462.1	KIGQGS	ENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE.....PKKEEA..VNEEVPLDLGDELEIEI	386			
NTDB id 194 SPR RS08825 WP 001085462.1	KIGQGS	ENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE.....PKKEEA..VNEEVPLDLGDELEIEI	386			
NTDB id 159 SP RS09750 WP 001085462.1	KIGQGS	ENAKKYLAEHPEIFDEIDKQVRSKFGLIDGEEVSEQDTENKKDE.....PKKEEA..VNEEVPLDLGDELEIEI	386			
NTDB id 499 SM12261 RS08315 WP 078228268.1	KIGQGS	ENAKKYLA DNPEIFDEIDHQVRVQFGLIDGEEIAES...KKDE.....AAQVDS..VNEEVTLDLGDELEIEI	382			
NTDB id 527 SMSK321 RS11065 WP 001085454.1	KIGQGS	ENAKKYLA DNPEVFAEIDHQVRVQFGLIDGEEAAES...KKDE.....VAQVDS..VNEEVTLDLGDELEIEI	382			
NTDB id 453 Spy49 1753c ACI62003.1	KIGQGS	ENAKRYLA DHPQLFDEIDRKVRVKFGLLEEESEESAMAVASE.....E.....TDDLALDLNGIEIED	378			
NTDB id 408 SMU RS09530 WP 002262392.1	KIGQGS	ENAKKFLA DNPEIFDDIDHKVRVQYGLIEEDNTEEKQSSKEK.....ETDEK..ADKNLVLELDDTIELED	383			
NTDB id 115 BSU 16940 NP 389576.2	RLGQGR	ENAKQFLKENKDIMLMIQEQIREHYGLDNNGVVQQAAETQEEL..EFE.E.....	348			
NTDB id 625 LCA RS02525 WP 011374196.1	RIGQGR	ENAKNYLA DHEDVEDEVRLKVRAAYGISDVPPEEDLPTTEDE.QI..NILPDDST.....EE.....	355			
NTDB id 362863 FCV16 RS13630 WP 003875210.1	QLGQGR	ENARTFLMENDEVANEIEKKIK	KEKLIGAVVTDDLSDDGVL.....APV.....DF.....	350		
NTDB id 1245 Cj1673c YP 002345041.1	KL	GQGR	ENSKAFLKENPEIAD	EITKAIQNSMGIEGMISGSEDDE..GEE.....	343	
NTDB id 1211 C694 RS00795 WP 000963128.1	KL	GQGR	ENAKALLKEDKALADEITL	KIKESIGSNEEIMPLPDEP..LEEME.....	347	
NTDB id 1214 NCTC11637 00359 SQJ03206.1	KL	GQGR	ENAKALLKEDKALADEITL	KIKESIGSNEEIMPLPDEP..LEEME.....	347	
NTDB id 1334 RAOC RS04870 WP 004918236.1	KL	GQGR	DTV	KELIKDNPELAEELEAKIREKLQAK.....	343	
NTDB id 1389 A4U84 RS07560 WP 021112712.1	KIGQGR	KNN	AVKWLKENPEIAD	KLEQEI	RNTLASNPNSVLKATASDSNDESDVVEEFSE.....EEL.....	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	KIGQGR	KDNVRVWLKENPEIS	DEIDAKIRALNGVEMHITEGTQDET.....DGERPE.....E.....	348		
NTDB id 1124 NGFG RS03960 WP 003688695.1	KIGQGR	KDNVRVWLKENPEIS	DEIDAKIRALNGVEMHITEGTQDET.....DGERPE.....E.....	348		
NTDB id 1123 OK783 RS03845 WP 003688695.1	KIGQGR	KDNVRVWLKENPEIS	DEIDAKIRALNGVEMHITEGTQDET.....DGERPE.....E.....	348		
NTDB id 1427 RS RS02760 WP 011000510.1	RIGQGR	DNCREFLRENAELAREIENK	VREHLGVTPMGAVTLA.EEVEED.....	352		
NTDB id 1165 A1552VC RS01565 WP 000344154.1	KIGQGR	KANACKYLKENPEIAKTLDKKL	REMLLNPENMQLIAETSSAAD	DVEFGAVPE.....EF.....	354	
NTDB id 1142 GTF74 RS11550 WP 000344154.1	KIGQGR	KANACKYLKENPEIAKTLDKKL	REMLLNPENMQLIAETSSAAD	DVEFGAVPE.....EF.....	354	
NTDB id 1205 PSJM300 05545 AFN77183.1	KIGQGR	KANA	AKYLEENPEIGQIE	EQQIRAKLLVTSANTKATPVAEDLADAD..I.....	347	
NTDB id 1074 ABD1 RS10195 WP 000344167.1	KIGQGR	KNN	VIRYFEENNQIAEEIERN	IREQLLTGTNGAVQ.I.EDEE	EPD..LLE.....S.....	349
NTDB id 1022 ACIAD RS06390 WP 004925639.1	KIGQGR	KNN	VIRYLEENPQISTEIEAV	IREQLLTKASDQTAA.HDETEE	EPD..LLES.....	349
consensus	***!!!!***** ** ***** ***** ** ** *			*		

logo

NTDB id 1313 DR RS12030 WP 010888966.1	..	363
NTDB id 600 KW2 RS01765 WP 011675413.1	..	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	EE	388
NTDB id 228 SPD RS09265 WP 001085462.1	EE	388
NTDB id 194 SPR RS08825 WP 001085462.1	EE	388
NTDB id 159 SP RS09750 WP 001085462.1	EE	388
NTDB id 499 SM12261 RS08315 WP 078228268.1	EE	384
NTDB id 527 SMSK321 RS11065 WP 001085454.1	EE	384
NTDB id 453 Spy49 1753c ACI62003.1	..	378
NTDB id 408 SMU RS09530 WP 002262392.1	..	383
NTDB id 115 BSU 16940 NP 389576.2	..	348
NTDB id 625 LCA RS02525 WP 011374196.1	..	355
NTDB id 362863 FCV16 RS13630 WP 003875210.1	..	350
NTDB id 1245 Cj1673c YP 002345041.1	..	343
NTDB id 1211 C694 RS00795 WP 000963128.1	..	347
NTDB id 1214 NCTC11637 00359 SQJ03206.1	..	347
NTDB id 1334 RAOC RS04870 WP 004918236.1	..	343
NTDB id 1389 A4U84 RS07560 WP 021112712.1	..	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	..	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	..	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	..	348
NTDB id 1427 RS RS02760 WP 011000510.1	..	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	..	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	..	354
NTDB id 1205 PSJM300 05545 AFN77183.1	..	347
NTDB id 1074 ABD1 RS10195 WP 000344167.1	..	349
NTDB id 1022 ACIAD RS06390 WP 004925639.1	..	349

consensus

 non conserved
 similar
 ≥ 50% conserved