

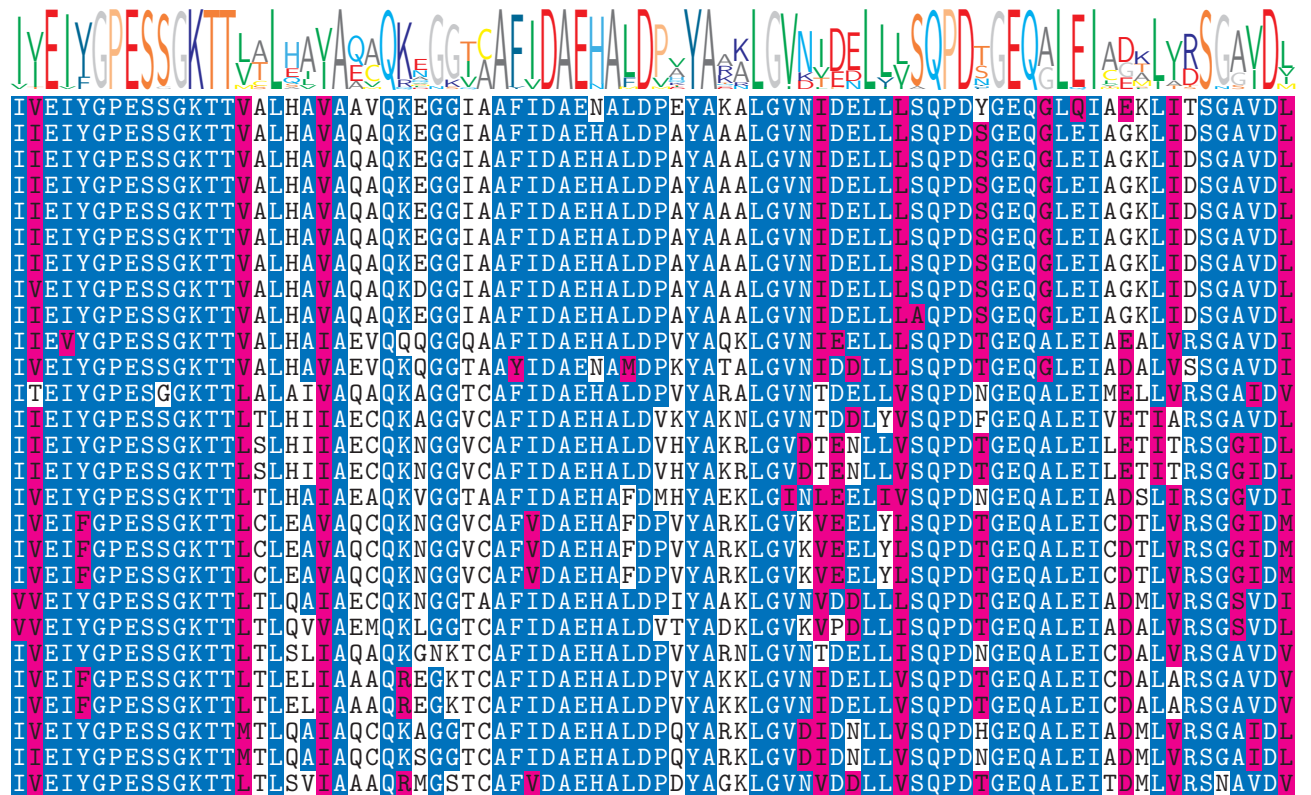
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NTDB id 600 KW2 RS01765 WP 011675413.1	MATKKK.....TNFDDITKKYGAERDKALADALALIEKD FGKGSIMRLGER. ANQKVS VSSGSLALDIALGAGGYPKGR	74
NTDB id 269 KZH43 RS08665 WP 001085462.1	.MAKKP.....KKLEEISKKKFGAEREKALNDALKLIEKD FGKGSIMRLGER. AEQKVQVMSSGSLALDIALGSGGYPKGR	73
NTDB id 228 SPD RS09265 WP 001085462.1	.MAKKP.....KKLEEISKKKFGAEREKALNDALKLIEKD FGKGSIMRLGER. AEQKVQVMSSGSLALDIALGSGGYPKGR	73
NTDB id 194 SPR RS08825 WP 001085462.1	.MAKKP.....KKLEEISKKKFGAEREKALNDALKLIEKD FGKGSIMRLGER. AEQKVQVMSSGSLALDIALGSGGYPKGR	73
NTDB id 159 SP RS09750 WP 001085462.1	.MAKKP.....KKLEEISKKKFGAEREKALNDALKLIEKD FGKGSIMRLGER. AEQKVQVMSSGSLALDIALGSGGYPKGR	73
NTDB id 527 SMSK321 RS11065 WP 001085454.1	.MAKKP.....KKLDEISKKKFGAEREKALNDALKLIEKD FGKGSIMRLGER. AEQKVQVMSSGSLALDIALGSGGYPKGR	73
NTDB id 499 SM12261 RS08315 WP 0028228268.1	.MAKKP.....KKLDEISKKKFGAEREKALNDALKLIEKD FGKGSIMRLGER. AEQKVQVMSSGSLALDIALGSGGYPKGR	73
NTDB id 408 SMU RS09530 WP 002262392.1	.MAKRI.....KKTEEITKKKFGDERKKALDDALKNIEKD FGKGVAMRLGER. AEQKVQVMSSGSLALDIALGAGGYPKGR	73
NTDB id 453 Spy49 1753c ACI62003.1	.MAKKL.....KKNEEITKKKFGDERRKALDDALKNIEKD FGKGVAMRLGER. AEQKVQVMSSGSLALDIALGAGGYPKGR	73
NTDB id 115 BSU 16940 NP 389576.2	.....MSDRQAALDMALKQIEKQFGKGSIMKLG EK. TDTRISTVPSGSLALDIALGIGGYPKGR	58
NTDB id 625 LCA RS02525 WP 011374196.1	.....MAKDERQAALDAALKKIEKNFGKGSIMRMGEK. VDTQVSTVSSGSLALDEALGVGGYPKGR	60
NTDB id 1313 DR RS12030 WP 010888966.1	.....MSKDATKEISAPTDAKERSKATETAMSI EKAFGKGSIMKLGAE. SKLDVQVVSTGSLSLDLALGVGGIPKGR	72
NTDB id 1245 Cj1673c YP 002345041.1	.....MDNKRKSLDAALKS LDKTFGKGTILRLGDK. EVEQTDSIGTGSVGLDLALGIGGVPKGR	59
NTDB id 1214 NCTC11637 00359 SQJ03206.1	.....MAIDEDKQKATISLAIKQIDKVF GK GALVRLGDK. QVEKIDAISTGSLGLDLALGIGGVPKGR	61
NTDB id 1211 C694 RS00795 WP 000963128.1	.....MAIDEDKQKATISLAIKQIDKVF GK GALVRLGDK. QVEKIDSISTGSLGLDLALGIGGVPKGR	61
NTDB id 1334 RAOC RS04870 WP 004918236.1	.....MAKT..ETTSPNDDKKKALAAVLEK LDKTYGKGTVMKLG DGTVDHNIIEVIPSGSLGLDLALGVGGYPKGR	68
NTDB id 1130 NGFG RS03960 WP 003688695.1	.....MSDDKSKALAAALAQIEKSF GKGAIMKMDGSQEQENLEVISTGSLGLDLALGVGGLPKGR	60
NTDB id 1124 NGFG RS03960 WP 003688695.1	.....MSDDKSKALAAALAQIEKSF GKGAIMKMDGSQEQENLEVISTGSLGLDLALGVGGLPKGR	60
NTDB id 1123 OK783 RS03845 WP 003688695.1	.....MSDDKSKALAAALAQIEKSF GKGAIMKMDGSQEQENLEVISTGSLGLDLALGVGGLPKGR	60
NTDB id 419653 FYK61 RS08900 WP 003481871.1	.....MDENKKRALSAALSQIEKQFGKGSVMRMGDR. VIEAVEV IPTGSLMLDIALGIGGLPKGR	59
NTDB id 1427 RS RS02760 WP 011000510.1	.....MEDGK..KAASMSAEKQKALAAALAQIEKQFGKGSIMKMGDA. EVPEVQVVSTGSLGLDVALGVGGLPKGR	68
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.MAENKKS SKNNTV..VKQVEPEKQKQALEAALAQIEKQFGKGSIMKLGQT. EQLDIESVSTGSLGLDLALGIGGLPKGR	76
NTDB id 1165 A1552VC RS01565 WP 000344154.1	.....MDENKQKALAAALGQIEKQFGKGSIMRLGDN. RAMDVETISTGSLSLDIALGAGGLPKGR	59
NTDB id 1142 GTF74 RS11550 WP 000344154.1	.....MDENKQKALAAALGQIEKQFGKGSIMRLGDN. RAMDVETISTGSLSLDIALGAGGLPKGR	59
NTDB id 1022 ACIAD RS06390 WP 004925639.1	.....MDDNKSKALQAALSQIEKQFGKNTVMRLGDN. TVQAVEAVSTGSLTLDIALGIGGLPKGR	59
NTDB id 1074 ABD1 RS10195 WP 000344167.1	.....MDENKSKALQAALSQIEKQFGKNTVMRLGDN. TVQAVEAVSTGSLTLDIALGIGGLPKGR	59
NTDB id 1205 PSJM300 05545 AFN77183.1	.....MDENKKRALAAALGQIEKQFGKGVAMRMGDH. DRQAIPSI STGSLGLDIALGIGGLPKGR	59
consensus	*** ** * ** *! *!***** * **!*!*!*!*!*! !*! !*! !*!	

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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 527 SMSK321 RS11065 WP 001085454.1  
 NTDB id 499 SM12261 RS08315 WP 0027228268.1  
 NTDB id 408 SMU RS09530 WP 002262392.1  
 NTDB id 453 Spy49 1753c ACI62003.1  
 NTDB id 115 BSU 16940 NP 389576.2  
 NTDB id 625 LCA RS02525 WP 011374196.1  
 NTDB id 1313 DR RS12030 WP 010888966.1  
 NTDB id 1245 Cj1673c YP 002345041.1  
 NTDB id 1214 NCTC11637 00359 SQJ03206.1  
 NTDB id 1211 C694 RS00795 WP 000963128.1  
 NTDB id 1334 RAOC RS04870 WP 004918236.1  
 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 419653 FYK61 RS08900 WP 003481871.1  
 NTDB id 1427 RS RS02760 WP 011000510.1  
 NTDB id 1389 A4U84 RS07560 WP 021112712.1  
 NTDB id 1165 A1552VC RS01565 WP 000344154.1  
 NTDB id 1142 GTF74 RS11550 WP 000344154.1  
 NTDB id 1022 ACIAD RS06390 WP 004925639.1  
 NTDB id 1074 ABD1 RS10195 WP 000344167.1  
 NTDB id 1205 PSJM300 05545 AFN77183.1



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NTDB id 600 KW2 RS01765 WP 011675413.1	ASVRLDVRGSTKIEEGS.GDNKTQIGKI	TKIKVVKNKVAPPFKVALVDIMFGEGISSTGELINIAVEEGI	TKKSGAWFAY	311	
NTDB id 269 KZH43 RS08665 WP 001085462.1	ASVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFKEAVVEIMYGEGISKTGELLKIASDLDI	IKKAGAWYSY	310	
NTDB id 228 SPD RS09265 WP 001085462.1	ASVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFKEAVVEIMYGEGISKTGELLKIASDLDI	IKKAGAWYSY	310	
NTDB id 194 SPR RS08825 WP 001085462.1	ASVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFKEAVVEIMYGEGISKTGELLKIASDLDI	IKKAGAWYSY	310	
NTDB id 159 SP RS09750 WP 001085462.1	ASVRLDVRGNTQIKGTG.DQKETN	VGKETKIKVVKNKVAPPFKEAVVEIMYGEGISKTGELLKIASDLDI	IKKAGAWYSY	310	
NTDB id 527 SMSK321 RS11065 WP 001085454.1	ASVRLDVRGSTQIKGTG.DQKDTN	VGKETKIKVVKNKVAPPFKEAFVEIMYGEGISKTGELLKIASDLDI	IKKAGAWYSY	310	
NTDB id 499 SM12261 RS08315 WP 0028228268.1	ASVRLDVRGSTQIKGTG.DQKDTN	VGKETKIKVVKNKVAPPFKEAFVEIMYGEGISKTGELLKIASDLDI	IKKAGAWYSY	310	
NTDB id 408 SMU RS09530 WP 002262392.1	SSVRLDVRGNTQIKGTG.EQKDSN	IGKETKIKVVKNKVAPPFKEAFVEIITYGEGISRTGELVKIASDLGI	IQKAGAWYSY	310	
NTDB id 453 Spy49 1753c ACI62003.1	ASVRLDVRGTTQIKGTG.DQKSS	IGKETKIKVVKNKVAPPFKEAFVEIMYGEGISRTGELVKIASDLDI	IQKAGAWFSY	310	
NTDB id 115 BSU 16940 NP 389576.2	SSVRLVRRRAEQLKQGN.....	DVMGNKTKIKVVKNKVAPPFRTAEVDIMYGEGISKEGEITD	LGTELDIVQKSGSWYSY	291	
NTDB id 625 LCA RS02525 WP 011374196.1	STVRLVRRRAETIKNGT.....	DMIGNRARIKVVKNKVAPPFKVAEVDIMYGGISRTGELVDM	AVEKDIINKSGSWYSY	293	
NTDB id 1313 DR RS12030 WP 010888966.1	ASVRLDVRKIGQ....PTKVGND	AVANTVKIKTIVKNKVAAPFKEVELALVYKGFQDLS	DLVGLAADMDI	IKKAGSFYSY	306
NTDB id 1245 Cj1673c YP 002345041.1	ASVRLDVRKIVAT....L.KQNE	EPIGNRVKVVKNKVAPPFRQAEFDVMFGEGLSREGELIDY	GVKLDIVDKSGAWFSY	293	
NTDB id 1214 NCTC11637 00359 SQJ03206.1	ASVRIDIRRIAA....L.KQNE	EQHIGNRAKAKVVKNKVAPPFREAEFDMFGEGISKEGEI	IDYGVKLDIVDKSGAWLSY	295	
NTDB id 1211 C694 RS00795 WP 000963128.1	ASVRIDIRRIAS....L.KQNE	EQHIGNRAKAKVVKNKVAPPFREAEFDMFGEGISKEGEI	IDYGVKLDIVDKSGAWLSY	295	
NTDB id 1334 RAOC RS04870 WP 004918236.1	ASVRIDIRRSLSDTGKIKDKS	GEVIGNRTKVVKNKVAPPFKSAEFDIMYGEGVSKVGEILD	VATDLDI	IQKSGSWFSY	306
NTDB id 1130 NGFG RS03960 WP 003688695.1	SSVRLDIRRTGS....I.KKG	EEVLGNETRVKVIKKNVAPPFRQAEFDILYGEGISWEGEL	IDIGVKNDI	INKSGAWYSY	293
NTDB id 1124 NGFG RS03960 WP 003688695.1	SSVRLDIRRTGS....I.KKG	EEVLGNETRVKVIKKNVAPPFRQAEFDILYGEGISWEGEL	IDIGVKNDI	INKSGAWYSY	293
NTDB id 1123 OK783 RS03845 WP 003688695.1	SSVRLDIRRTGS....I.KKG	EEVLGNETRVKVIKKNVAPPFRQAEFDILYGEGISWEGEL	IDIGVKNDI	INKSGAWYSY	293
NTDB id 419653 FYK61 RS08900 WP 003481871.1	ASVRLDIRRIGA....I.KKG	DEIIGNQTKIKVVKNKLAPPFKQVVEILYGEGISREGEL	IDMGVEAKLV	DKAGAWYSY	294
NTDB id 1427 RS RS02760 WP 011000510.1	ASVRLDIRRIGS....I.KKG	DEVVGNETKVVKNKVAPPFREAI	FIDILYAGVRSREGELIDLGVEAKV	VEKSGAWYSY	301
NTDB id 1389 A4U84 RS07560 WP 021112712.1	ASVRLDIRRCGV....V.KDG	DEIIGSETKVVKNKVAPPFREVFQD	IMYGEGISRMNELLILAEANGF	IKKSGAWFSY	309
NTDB id 1165 A1552VC RS01565 WP 000344154.1	ASVRLDIRRTGA....I.KEG	EEVVGNETRIKVVKNKIAAPFKEANTQ	IMYGGFNREGELIDLGVKHK	MVEKSGAWYSY	292
NTDB id 1142 GTF74 RS11550 WP 000344154.1	ASVRLDIRRTGA....I.KEG	EEVVGNETRIKVVKNKIAAPFKEANTQ	IMYGGFNREGELIDLGVKHK	MVEKSGAWYSY	292
NTDB id 1022 ACIAD RS06390 WP 004925639.1	ASVRLDIRRIGQ....V.KEG	DEIIGSETKVVKNKMAPPFREAI	FQILYKGVNQLGELVDLAVQQ	NIVQKAGAWYSY	292
NTDB id 1074 ABD1 RS10195 WP 000344167.1	ASVRLDIRRIGQ....V.KEG	DEIIGSETKVVKNKMAPPFKEAIFQ	ILYKGTNQLGELVDLAVQQ	DIVQKAGAWYSY	292
NTDB id 1205 PSJM300 05545 AFN77183.1	ASVRLDIRRTGA....V.KEG	DEVVGSETRVKVVKNKVAPPFRQAEFQ	ILYKGIYRNGETIDLGVQQ	LVEKSGAWAY	292
consensus	**!!**!*	* ** **!!**!!**!!** * **!!**!!** **!!**			

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NTDB id 600	KW2	RS01765	WP 011675413.1	NDEKIGQGAEKAKNYLKEHQDVFDEIDHKVRAAHGILDDSEVAETEEETTASHTKAKAKKEEKAVETEEIELELED...	387
NTDB id 269	KZH43	RS08665	WP 001085462.1	KDEKIGQGSENAKKYLAEHPAIFDEIDKQVRSKFGLEDGEEVSEQDTEENKDE...PKKEEA..VNEEVPLDLGDELEI	384
NTDB id 228	SPD	RS09265	WP 001085462.1	KDEKIGQGSENAKKYLAEHPAIFDEIDKQVRSKFGLEDGEEVSEQDTEENKDE...PKKEEA..VNEEVPLDLGDELEI	384
NTDB id 194	SPR	RS08825	WP 001085462.1	KDEKIGQGSENAKKYLAEHPAIFDEIDKQVRSKFGLEDGEEVSEQDTEENKDE...PKKEEA..VNEEVPLDLGDELEI	384
NTDB id 159	SP	RS09750	WP 001085462.1	KDEKIGQGSENAKKYLAEHPAIFDEIDKQVRSKFGLEDGEEVSEQDTEENKDE...PKKEEA..VNEEVPLDLGDELEI	384
NTDB id 527	SMSK321	RS11065	WP 001085454.1	KDEKIGQGSENAKKYLADNPEVFAEIDHQVRVQFGLIDGEEAAE...SKKDE...VAQVDS..VNEEVTLDLGDELEI	380
NTDB id 499	SM12261	RS08315	WP 078228268.1	KDEKIGQGSENAKKYLADNPEVFAEIDHQVRVQFGLIDGEEIAE...SKKDE...AAQVDS..VNEEVTLDLGDELEI	380
NTDB id 408	SMU	RS09530	WP 002262392.1	NGEKIGQGSNNAKFLADNPEVFDIDHKVVRVQYGLIEEDNTEEKQSSKEK.....ETDEK..ADKNLVLELDDTIEL	381
NTDB id 453	Spy49	1753c	ACI62003.1	NGEKIGQGSNNAKRYLADHPQLFDEIDRKVRVQFGLLEESEESAMAVASE.....E.....TDDLALDLDNGIEI	376
NTDB id 115	BSU	16940	NP 389576.2	EEERLGQGRNNAKQFLKENKDIMLMIQEQIREHYGLDNNGVVQQAEETQEEL.EFE.E.....	348
NTDB id 625	LCA	RS02525	WP 011374196.1	GSERIGQGRNNAKNYLADHEDVEDEVRLKVRVAAAYGISDVPEEDLPTTEDE.QI.NILPDDST.....EE.....	355
NTDB id 1313	DR	RS12030	WP 010888966.1	GDERIGQGGKEKTIAYTAERPMEQEIRDRVMAAIRAGNAGEAPALAPAPAAPEAAEA.....	363
NTDB id 1245	Cj1673c	YP 002345041.1	KDKKLGQGRNSKAFLEKPEIADEITKAIQNSMGTIEMI.....SGSEDDEGEE.....	343	
NTDB id 1214	NCTC11637	00359	SQJ03206.1	QDKKLGQGRNNAKALLKEDKALADEITLKI KESIGSNEEI.....MPLPDEPLEEME.....	347
NTDB id 1211	C694	RS00795	WP 000963128.1	QDKKLGQGRNNAKALLKEDKALADEITLKI KESIGSNEEI.....MPLPDEPLEEME.....	347
NTDB id 1334	RAOC	RS04870	WP 004918236.1	QDTKLGQGRDVTVKELIKDNPDLAELEAKIREKLQAK.....	343
NTDB id 1130	NGFG	RS03960	WP 003688695.1	NGAKIGQGKDNVVRVWLKENPEISDEIDAKIRALNGVEMHI.....TEGTQDETGER.....PEE.....	348
NTDB id 1124	NGFG	RS03960	WP 003688695.1	NGAKIGQGKDNVVRVWLKENPEISDEIDAKIRALNGVEMHI.....TEGTQDETGER.....PEE.....	348
NTDB id 1123	OK783	RS03845	WP 003688695.1	NGAKIGQGKDNVVRVWLKENPEISDEIDAKIRALNGVEMHI.....TEGTQDETGER.....PEE.....	348
NTDB id 419653	FYK61	RS08900	WP 003481871.1	GDERIGQGGKDNARTYLRDNPQVATRLEAELREKFQPAEAP.....REAGDDEDKE.....	344
NTDB id 1427	RS	RS02760	WP 011000510.1	NGERIGQGRDNCREFLRENAELAREIENKVRHLGVTPMG.....AVTLAAEEVEED.....	352
NTDB id 1389	A4U84	RS07560	WP 021112712.1	DGTKIGQGGKNNVAVKWLKENPEIADKLEQEIRNTLASNPNS.....VLKATASDSNDESDV..EEFSEEEL.....	372
NTDB id 1165	A1552VC	RS01565	WP 000344154.1	NGDKIGQGGKANACKYLKENPEIAKTLDKKLRREMLLNPNEM.....QLIAETSSAADDVEF..GAVPEEF.....	354
NTDB id 1142	GTF74	RS11550	WP 000344154.1	NGDKIGQGGKANACKYLKENPEIAKTLDKKLRREMLLNPNEM.....QLIAETSSAADDVEF..GAVPEEF.....	354
NTDB id 1022	ACIAD	RS06390	WP 004925639.1	QGNKIGQGGKNNVIRYLEENPQISTEIEAVIREQLLTKASD.....QTAA.HDETEEEPDL..L..ES.....	349
NTDB id 1074	ABD1	RS10195	WP 000344167.1	QGNKIGQGGKNNVIRYLEENPQIAEIEIERNIREQLLTTGTN.....GAVQ.I.EDEEPPDL..L..LES.....	349
NTDB id 1205	PSJM300	05545	AFN77183.1	KGSKIGQGGKANAAKYLEENPEIQEIEQQIRAKLLVTSAN.....TKATPVAEDLADADI.....	347
consensus				**!!!***** ** ***** ***** ** **	

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NTDB id 600 KW2 RS01765 WP 011675413.1	....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	EIEE	388
NTDB id 228 SPD RS09265 WP 001085462.1	EIEE	388
NTDB id 194 SPR RS08825 WP 001085462.1	EIEE	388
NTDB id 159 SP RS09750 WP 001085462.1	EIEE	388
NTDB id 527 SMSK321 RS11065 WP 001085454.1	EIEE	384
NTDB id 499 SM12261 RS08315 WP 078228268.1	EIEE	384
NTDB id 408 SMU RS09530 WP 002262392.1	ED..	383
NTDB id 453 Spy49 1753c ACI62003.1	ED..	378
NTDB id 115 BSU 16940 NP 389576.2	....	348
NTDB id 625 LCA RS02525 WP 011374196.1	....	355
NTDB id 1313 DR RS12030 WP 010888966.1	....	363
NTDB id 1245 Cj1673c YP 002345041.1	....	343
NTDB id 1214 NCTC11637 00359 SQJ03206.1	....	347
NTDB id 1211 C694 RS00795 WP 000963128.1	....	347
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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 419653 FYK61 RS08900 WP 003481871.1	....	344
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NTDB id 1074 ABD1 RS10195 WP 000344167.1	....	349
NTDB id 1205 PSJM300 05545 AFN77183.1	....	347

consensus

 non conserved  
 similar  
 ≥ 50% conserved