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NTDB id 625 LCA RS02525 WP 011374196.1MAKDERQAALDAALKKIEKNFGKGSIMRMGEK.VDTQVSTVSSGSLALDEALGVGGYPRGR	60
NTDB id 1135085 JX313 RS07845 WP 003725961.1	.....MNDRQAALDQALKQIEKQFGKGSIMKLGEH.SDQNI STI SS GSLALDIALGVGGYPRGR	58
NTDB id 115 BSU 16940 NP 389576.2	.....MSDRQAALDMALKQIEKQFGKGSIMKLGEK.TDTRI STVPS GSLALDIALGIGGYPRGR	58
NTDB id 600 KW2 RS01765 WP 011675413.1	MATKK.....KTNFDDITKKYGAERDKALADALALIEKDFGKGSIMRLGHA.ANQKVSVMSSGSLALDIALCAGGYPRGR	74
NTDB id 269 KZH43 RS08665 WP 001085462.1	.MAKK.....PKKLEEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALCSGGYPRGR	73
NTDB id 228 SPD RS09265 WP 001085462.1	.MAKK.....PKKLEEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALCSGGYPRGR	73
NTDB id 194 SPR RS08825 WP 001085462.1	.MAKK.....PKKLEEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALCSGGYPRGR	73
NTDB id 159 SP RS09750 WP 001085462.1	.MAKK.....PKKLEEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALCSGGYPRGR	73
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NTDB id 527 SMSK321 RS11065 WP 001085454.1	.MAKK.....PKKLEEISKKFGAEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALCSGGYPRGR	73
NTDB id 453 Spy49 1753c ACI62003.1	.MAKK.....LKKNEEITKKFGDERRKALDDALKNIEKDFGKGVMLRGER.AEQKVQVMSSGSLALDIALCAGGYPRGR	73
NTDB id 408 SMU RS09530 WP 002262392.1	.MAKR.....IKKTEEITKKFGDERKKALDDALKNIEKDFGKGVMLRGER.AEQKVQVMSSGSLALDIALCAGGYPRGR	73
NTDB id 1313 DR RS12030 WP 010888966.1	.....MSKDATKEISAPTDAKERSKATETAMSGIEKAFGKGSIMKLGAE.SKLDVQVVSTGSLSLDIALGVGGI PRGR	72
NTDB id 1245 Cj1673c YP 002345041.1	.....MDDNKRKSLDAALKSLDKTFGKCTILRLCDK.EVEQIDSTIGTGSVGLDIALGIGGVPKGR	59
NTDB id 1211 C694 RS00795 WP 000963128.1	.....MAIDEDKQKATSLATKQIDKVFVGKCALVRLCDK.QVEKIDASTGSLGLDIALGIGGVPKGR	61
NTDB id 1214 NCTC11637 00359 SQJ03206.1	.....MAIDEDKQKATSLATKQIDKVFVGKCALVRLCDK.QVEKIDASTGSLGLDIALGIGGVPKGR	61
NTDB id 1334 RA0C RS04870 WP 004918236.1	.....MAKT..ETTSPNDKKKALAAVLEKLDKTYGKGTVMKLCGTVVDHNLEVI PS GSLGLDIALGVGGYPRGR	68
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.MAENKKSSKNNTV..VKQVEPEQKQKALEAALAQIEKQFGKGSIMKLGQT.EQLDIESVSTGSLGLDIALGIGGLPMGR	76
NTDB id 1130 NGFG RS03960 WP 003688695.1	.....MSDDKSKALAAALAQIEKSFGKGAIMKMDGSQQEENLEVI STGSLGLDIALGVGGLPRGR	60
NTDB id 1124 NGFG RS03960 WP 003688695.1	.....MSDDKSKALAAALAQIEKSFGKGAIMKMDGSQQEENLEVI STGSLGLDIALGVGGLPRGR	60
NTDB id 1123 OK783 RS03845 WP 003688695.1	.....MSDDKSKALAAALAQIEKSFGKGAIMKMDGSQQEENLEVI STGSLGLDIALGVGGLPRGR	60
NTDB id 1427 RS RS02760 WP 011000510.1	.MEDG.....K..KAASMSAEKQKALAAALAQIEKQFGKGSIMKMGDA.EVEPVQVVSTGSLGLDIALGVGGLPRGR	68
NTDB id 1165 A1552VC RS01565 WP 000344154.1	.....MDENKQKALAAALGQIEKQFGKGSIMRLGDN.RAMDVETI STGSLSLDIALCAGGLPMGR	59
NTDB id 1142 GTF74 RS11550 WP 000344154.1	.....MDENKQKALAAALGQIEKQFGKGSIMRLGDN.RAMDVETI STGSLSLDIALCAGGLPMGR	59
NTDB id 1074 ABD1 RS10195 WP 000344167.1	.....MDENKSKALQAALSGIEKQFGKNTVMRLGDN.TVQAVEAVSTGSLTLDIALGIGGLPKGR	59
NTDB id 1022 ACIAD RS06390 WP 004925639.1	.....MDDNKSALQAALSGIEKQFGKNTVMRLGDN.TVQAVEAVSTGSLTLDIALGIGGLPKGR	59
NTDB id 1205 PSJM300 05545 AFN77183.1MDENKRFALAAALGQIEKQFGKGVMLRMDH.DRQAIPSI STGSLGLDIALGIGGLPKGR	59
consensus	*****! *!!***** * **!!*!!*!!! !!! *!!	

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NTDB id 625 LCA RS02525 WP 011374196.1	TVRLEVRRAETIKNGT....DM	GNRARIKVVKNKVAPPFKVAEVDIMYGGISRTGELVDMAVEKDIINKSGSWYSYG	294
NTDB id 1135085 JX313 RS07845 WP 003725961.1	TVRLEVRRAEQLKQGT....DVM	GNKTKIKVVKNKVAPPFRITAEVDIMYGGEGISREGELVDMAAEVDVINKSGSWYSYK	292
NTDB id 115 BSU 16940 NP 389576.2	SVRLEVRRAEQLKQGN....DVM	GNKTKIKVVKNKVAPPFRITAEVDIMYGGEGISKEGELIDLGTELDIVQKSGSWYSYE	292
NTDB id 600 KW2 RS01765 WP 011675413.1	SVRLDVRGSTKIEEGS.GDNKTQ	CKITKIKVVKNKVAPPFKVALVDIMFEGEGISSTGELINIAVEEGTIKSGAWFAYN	312
NTDB id 269 KZH43 RS08665 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKE	TNMGKETKIKVVKNKVAPPFKAEAVVEIMYGGEGISKTGELLKIASDLDIINKAGAWYSYK	311
NTDB id 228 SPD RS09265 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKE	TNMGKETKIKVVKNKVAPPFKAEAVVEIMYGGEGISKTGELLKIASDLDIINKAGAWYSYK	311
NTDB id 194 SPR RS08825 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKE	TNMGKETKIKVVKNKVAPPFKAEAVVEIMYGGEGISKTGELLKIASDLDIINKAGAWYSYK	311
NTDB id 159 SP RS09750 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKE	TNMGKETKIKVVKNKVAPPFKAEAVVEIMYGGEGISKTGELLKIASDLDIINKAGAWYSYK	311
NTDB id 499 SM12261 RS08315 WP 078228268.1	SVRLDVRGSTQIKGTG.DQKD	TNMGKETKIKVVKNKVAPPFKAEAVVEIMYGGEGISKTGELLKIASDLDIINKAGAWYSYK	311
NTDB id 527 SMSK321 RS11065 WP 001085454.1	SVRLDVRGSTQIKGTG.DQKD	TNMGKETKIKVVKNKVAPPFKAEAVVEIMYGGEGISKTGELLKIASDLDIINKAGAWYSYK	311
NTDB id 453 Spy49 1753c ACI62003.1	SVRLDVRGTTQIKGTG.DQKD	SSITGKETKIKVVKNKVAPPFKVAEVEIMYGGEGISRTGELVKIASDLDITKAGAWFSYN	311
NTDB id 408 SMU RS09530 WP 002262392.1	SVRLDVRGNTQIKGTG.EQKD	SNMGKETKIKVVKNKVAPPFKAEAVVEITYGEGISRTGELVKIASDLGITQKAGAWYSYN	311
NTDB id 1313 DR RS12030 WP 010888966.1	SVRLDVRKIGQ....PTKVG	NDAVANTVKTIKTVKNKVAAPPKVELALIVYCKGFDQLSDLVGLAADMDIINKAGSFSYSYG	307
NTDB id 1245 Cj1673c YP 002345041.1	SVRLDVRKIVAT....L.KQN	EEPIGNRVKIKVVKNKVAPPFRQAEEFDVMEGEGLSREGELIDYGVKLDIVDKSGAWFSYK	294
NTDB id 1211 C694 RS00795 WP 000963128.1	SVRIDIRRIAS....L.KQN	EQHIGNRAKIKVVKNKVAPPFRQAEEFDIMFEGEGISKEGETIDYGVKLDIVDKSGAWLSYQ	296
NTDB id 1214 NCTC11637 00359 SQJ03206.1	SVRIDIRRIAA....L.KQN	EQHIGNRAKIKVVKNKVAPPFRQAEEFDIMFEGEGISKEGETIDYGVKLDIVDKSGAWLSYQ	296
NTDB id 1334 RA0C RS04870 WP 004918236.1	SVRIDIRRSLSDTGKIKDKS	GEVIGNRTKIKVVKNKVAPPFKSAEEFDIMYGGEGVSKVGEILDVATDLDIQKSGSWEFSYQ	307
NTDB id 1389 A4U84 RS07560 WP 021112712.1	SVRLDIRRCGV....V.KDG	DEIIGSETKIKVVKNKVAPPFRVQFDDIMYGGEGISRMNELILAEANGFIKKSAGAWFSYD	310
NTDB id 1130 NGFG RS03960 WP 003688695.1	SVRLDIRRTGS....I.KKG	EEVIGNETRIVKVIKNKVAPPFRQAEEFDILYGGEGISWEGELIDIGVKNDIINKSGAWYSYN	294
NTDB id 1124 NGFG RS03960 WP 003688695.1	SVRLDIRRTGS....I.KKG	EEVIGNETRIVKVIKNKVAPPFRQAEEFDILYGGEGISWEGELIDIGVKNDIINKSGAWYSYN	294
NTDB id 1123 OK783 RS03845 WP 003688695.1	SVRLDIRRTGS....I.KKG	EEVIGNETRIVKVIKNKVAPPFRQAEEFDILYGGEGISWEGELIDIGVKNDIINKSGAWYSYN	294
NTDB id 1427 RS RS02760 WP 011000510.1	SVRLDIRRIGS....I.KKG	EEVIGNETKIKVVKNKVAPPFRQAEEFDILYGAQVSRREGELIDLGVEAKVVEKSGAWYSYN	302
NTDB id 1165 A1552VC RS01565 WP 000344154.1	SVRLDIRRTGA....I.KEG	EEVIGNETRIKVVKNKIAAPPKAEANTQIMYGGCFNREGELIDLGVKHKMVEKSGAWYSYN	293
NTDB id 1142 GTF74 RS11550 WP 000344154.1	SVRLDIRRTGA....I.KEG	EEVIGNETRIKVVKNKIAAPPKAEANTQIMYGGCFNREGELIDLGVKHKMVEKSGAWYSYN	293
NTDB id 1074 ABD1 RS10195 WP 000344167.1	SVRLDIRRIGQ....V.KEG	DEIVGSETKIKVVKNKMAPPFKAEIFQILYCKGTNQLGELVDLAVQQNDIVQKAGAWYSYQ	293
NTDB id 1022 ACIAD RS06390 WP 004925639.1	SVRLDIRRIGQ....V.KEG	DEIVGSETKIKVVKNKMAPPFKAEIFQILYCKGTNQLGELVDLAVQQNDIVQKAGAWYSYQ	293
NTDB id 1205 PSJM300 05545 AFN77183.1	SVRLDIRRTGA....V.KEG	EEVIGNETRVKVVKNKVAPPFRQAEEFQILYCKGIYENGETIDLGVQQGLVEKSGAWAYK	293
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NTDB id 625 LCA RS02525 WP 011374196.1	SE R I G Q G R E N A K N Y L A D H E D V E D E V R L K V R A A Y C T S D V P E E D L P T T E D E Q I N I L P D D S T E E	355
NTDB id 1135085 JX313 RS07845 WP 003725961.1	E E R I G Q G R E N A K Q Y L K E H T D I R D E I S K R V R E E Y E I D G S N K E P L D . . E G E E T L S L L D D E	348
NTDB id 115 BSU 16940 NP 389576.2	E E R I G Q G R E N A K Q F L K E N K D I M L M I Q E Q I R E H Y G I D N N G V V Q Q A E E T Q E E L F E E	348
NTDB id 600 KW2 RS01765 WP 011675413.1	D E K I G Q G A E K A K N Y L K E H Q D V F D E I D H K V R A A H C I L D D S E V A E T E E E T T A S K T K A K A K K E E K A V E T E E I E L E L E D	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	D E K I G Q G S E N A K K Y L A E H P E I F D E I D K Q V R S K F C I L D G E E V S E Q D T E N K K D E P K K E E A . . V N E E V P L D L G D E L E I E	385
NTDB id 228 SPD RS09265 WP 001085462.1	D E K I G Q G S E N A K K Y L A E H P E I F D E I D K Q V R S K F C I L D G E E V S E Q D T E N K K D E P K K E E A . . V N E E V P L D L G D E L E I E	385
NTDB id 194 SPR RS08825 WP 001085462.1	D E K I G Q G S E N A K K Y L A E H P E I F D E I D K Q V R S K F C I L D G E E V S E Q D T E N K K D E P K K E E A . . V N E E V P L D L G D E L E I E	385
NTDB id 159 SP RS09750 WP 001085462.1	D E K I G Q G S E N A K K Y L A E H P E I F D E I D K Q V R S K F C I L D G E E V S E Q D T E N K K D E P K K E E A . . V N E E V P L D L G D E L E I E	385
NTDB id 499 SM12261 RS08315 WP 078228268.1	D E K I G Q G S E N A K K Y L A D N P E I F D E I D H Q V R V Q F C I L D G E E I A E S K K D E A A Q V D S . . V N E E V T L D L G D E L E I E	381
NTDB id 527 SMSK321 RS11065 WP 001085454.1	D E K I G Q G S E N A K K Y L A D N P E V F A E I D H Q V R V Q F C I L D G E E A A A E S K K D E V A Q V D S . . V N E E V T L D L G D E L E I E	381
NTDB id 453 Spy49 1753c ACI62003.1	G E K I G Q G S E N A K R Y L A D H P Q L F D E I D R K V R V K F C I L E E S E E E S A M A V A S E E T D D L A L D L D N G I E I E	377
NTDB id 408 SMU RS09530 WP 002262392.1	G E K I G Q G S E N A K K F L A D N P E I F D I D H K V R V Q Y C I I E E D N T E E K Q S S K E K E T D E K . . A D K N L V L E L D D T I E L E	382
NTDB id 1313 DR RS12030 WP 010888966.1	D E R I G Q G K E K T I A Y I A E R P E M E Q E I R D R V M A A T R A G N A G E A P A L A P A P A A P A E A A E A	363
NTDB id 1245 Cj1673c YP 002345041.1	D K K I G Q G R E N S K A F L K E N P E I A D E I T K A I Q N S M C I E G M I S G S E D D E . . G E E	343
NTDB id 1211 C694 RS00795 WP 000963128.1	D K K I G Q G R E N A K A L L K E D K A L A D E I T L K I K E S I C S N E E I M P L P D E P . . L E E M E	347
NTDB id 1214 NCTC11637 00359 SQJ03206.1	D K K I G Q G R E N A K A L L K E D K A L A D E I T L K I K E S I C S N E E I M P L P D E P . . L E E M E	347
NTDB id 1334 RA0C RS04870 WP 004918236.1	D T K I G Q G R D T V K E L I K D N P E I A E E L E A K I R E K L Q A K	343
NTDB id 1389 A4U84 RS07560 WP 021112712.1	G T K I G Q G K N N A V K V L K E N P E I A D K L E Q E I R N T L A S N P N S V L K A T A S D S N D E S D V E E . . F S E E E L	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	G A K I G Q G K D N V R V W L K E N P E I S D E I D A K I R A L N C V E M H I T E G T Q D E T D G E . . R P E E	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	G A K I G Q G K D N V R V W L K E N P E I S D E I D A K I R A L N C V E M H I T E G T Q D E T D G E . . R P E E	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	G A K I G Q G K D N V R V W L K E N P E I S D E I D A K I R A L N C V E M H I T E G T Q D E T D G E . . R P E E	348
NTDB id 1427 RS RS02760 WP 011000510.1	G E R I G Q G R D N C R E F L R E N A E I A R E I E N K V R E H L C V T P M G A V . T L A E E V E E D	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	G D K I G Q G K A N A C K Y L K E N P E I A K T L D K K L R E M L L N P E N M Q L I A E T S S A A D D V E F G A . . V P E E F	354
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NTDB id 1074 ABD1 RS10195 WP 000344167.1	G N K I G Q G K N N V I R Y F E E N N Q I A E E I E R N I R E Q L L T T G T N G A V Q . I . E D E E E P D . . L . . L L E S	349
NTDB id 1022 ACIAD RS06390 WP 004925639.1	G N K I G Q G K N N V I R Y L E E N P G I S T E I E A V I R E Q L L T K A S D Q T A A . H D E T E E E P D . . L . . L E S	349
NTDB id 1205 PSJM300 05545 AFN77183.1	G S K I G Q G K A N A A K Y L E E N P E I G Q E I E Q Q I R A K L L V T S A N T K A T P V A E D L A D A D . . I	347
consensus	**!!!** ** * ** ** ** **	

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NTDB id 625 LCA RS02525 WP 011374196.1 ... 355
NTDB id 1135085 JX313 RS07845 WP 003725961.1 ... 348
NTDB id 115 BSU 16940 NP 389576.2 ... 348
NTDB id 600 KW2 RS01765 WP 011675413.1 ... 387
NTDB id 269 KZH43 RS08665 WP 001085462.1 IEE 388
NTDB id 228 SPD RS09265 WP 001085462.1 IEE 388
NTDB id 194 SPR RS08825 WP 001085462.1 IEE 388
NTDB id 159 SP RS09750 WP 001085462.1 IEE 388
NTDB id 499 SM12261 RS08315 WP 078228268.1 IEE 384
NTDB id 527 SMSK321 RS11065 WP 001085454.1 IEE 384
NTDB id 453 Spy49 1753c ACI62003.1 D.. 378
NTDB id 408 SMU RS09530 WP 002262392.1 D.. 383
NTDB id 1313 DR RS12030 WP 010888966.1 ... 363
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 RA0C 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 1074 ABD1 RS10195 WP 000344167.1 ... 349
NTDB id 1022 ACIAD RS06390 WP 004925639.1 ... 349
NTDB id 1205 PSJM300 05545 AFN77183.1 ... 347
consensus
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 non conserved
 similar
 ≥ 50% conserved