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NTDB id 600 KW2 RS01765 WP 011675413.1	MATK...KKTNFDDITKKYGAERDKALADALALIEKDFGKGSIMRLGEA.ANQKVSVVSSGSLALDIALGAGGYPKGRI	75
NTDB id 269 KZH43 RS08665 WP 001085462.1	.MAK...KPKKLEEISKKFGEEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRI	74
NTDB id 228 SPD RS09265 WP 001085462.1	.MAK...KPKKLEEISKKFGEEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRI	74
NTDB id 194 SPR RS08825 WP 001085462.1	.MAK...KPKKLEEISKKFGEEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRI	74
NTDB id 159 SP RS09750 WP 001085462.1	.MAK...KPKKLEEISKKFGEEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRI	74
NTDB id 499 SM12261 RS08315 WP 0782228268.1	.MAK...KPKKLDEISKKFGEEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRI	74
NTDB id 527 SMSK321 RS11065 WP 001085454.1	.MAK...KPKKLDEISKKFGEEREKALNDALKLIEKDFGKGSIMRLGER.AEQKVQVMSSGSLALDIALGSGGYPKGRI	74
NTDB id 26635 SSUBM407 RS00370 WP 011922545.1	MAKK...PGKKLEDITKKFGERDKKALDDALSKIEKDFGKGAVMRLGER.AEQKVQVMSSGSLSLIDIALGAGGYPKGRI	75
NTDB id 408 SMU RS09530 WP 002262392.1	.MAK...RIKKTEEITKKFGERDKKALDDALKNIEKDFGKGAVMRLGER.AEQKVQVMSSGSLALDIALGAGGYPKGRI	74
NTDB id 453 Spy49 1753c ACI62003.1	.MAK...KLKKNEEITKKFGERDKKALDDALKNIEKDFGKGAVMRLGER.AEQKVQVMSSGSLALDIALGAGGYPKGRI	74
NTDB id 115 BSU 16940 NP 389576.2	.....MSDRQAALDMALKQIEKQFGKGSIMKLGK.TDTRISTVPSGSLALDTALGIGGYPKGRI	59
NTDB id 625 LCA RS02525 WP 011374196.1	.....MAKDERQAALDAALKKIEKNFGKGSIMRMGEK.VDTQVSTVSSGSLALDEALGVGGYPRGRI	61
NTDB id 1313 DR RS12030 WP 010888966.1	.....MSKDATKEISAPTDAKERSKATETAMSQIEKAFGKGSIMKLGAE.SKLDVQVSTGSLSLDLALGVGGIYPRGRI	73
NTDB id 1245 Cj1673c YP 002345041.1	.....MDNKRKSLDAALSKSLDKTFGKGTILRLGDK.EVEQIDSIGTGSVGLDLALGIGGVPKGRI	60
NTDB id 1211 C694 RS00795 WP 000963128.1	.....MAIDEDKQKATISLAIKQIDKVFSGKALVRLGDK.QVEKIDSISTGSLGLDLALGIGGVPKGRI	62
NTDB id 1214 NCTC11637 00359 SQJ03206.1	.....MAIDEDKQKATISLAIKQIDKVFSGKALVRLGDK.QVEKIDAISTGSLGLDLALGIGGVPKGRI	62
NTDB id 1334 RAOC RS04870 WP 004918236.1	.....MAKT..ETSPNDDKKKALAAVLEKLDKTYGKGTVMKLGDTVDHNIETVPSGSLGLDLALGVGGYPRGRI	69
NTDB id 1389 A4U84 RS07560 WP 021112712.1	MAENKKSNNNTV.VKQVEPEQKKQALEAALAQIEKQFGKGSIMKLGQT.EQLDIESVSTGSLGLDLALGIGGLPMGRI	77
NTDB id 1130 NGFG RS03960 WP 003688695.1	.....MSDDKSKALAAALAQIEKSFSGKGAIMKMDGSQREENLEVISTGSLGLDLALGVGGLPRGRI	61
NTDB id 1124 NGFG RS03960 WP 003688695.1	.....MSDDKSKALAAALAQIEKSFSGKGAIMKMDGSQREENLEVISTGSLGLDLALGVGGLPRGRI	61
NTDB id 1123 OK783 RS03845 WP 003688695.1	.....MSDDKSKALAAALAQIEKSFSGKGAIMKMDGSQREENLEVISTGSLGLDLALGVGGLPRGRI	61
NTDB id 1427 RS RS02760 WP 011000510.1	MEDG.....K..KAASMSAEKQKALAAALAQIEKQFGKGSIMKMGDA.EVEPVQVSTGSLGLDVALGVGGLPRGRV	69
NTDB id 1165 A1552VC RS01565 WP 000344154.1	.....MDENKQKALAAALGQIEKQFGKGSIMRLGDN.RAMDVETISTGSLSLDIALGAGGLPMGRI	60
NTDB id 1142 GTF74 RS11550 WP 000344154.1	.....MDENKQKALAAALGQIEKQFGKGSIMRLGDN.RAMDVETISTGSLSLDIALGAGGLPMGRI	60
NTDB id 1074 ABD1 RS10195 WP 000344167.1	.....MDENKSKALQAALSQIEKQFGKNTVMRLGDN.TVQAVEAVSTGSLTLDIALGIGGLPKGRI	60
NTDB id 1022 ACIAD RS06390 WP 004925639.1	.....MDNKSALQAALSQIEKQFGKNTVMRLGDN.TVQAVEAVSTGSLTLDIALGIGGLPKGRI	60
NTDB id 1205 PSJM300 05545 AFN77183.1MDENKRALAAALGQIEKQFGKGAVMRMGDH.DRQAIPSIISTGSLGLDIALGIGGLPKGRI	60
consensus	*** ** * **! *!***** * **!!!**!*!!! !! *!***	

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NTDB id 600 KW2 RS01765 WP 011675413.1	VEIYGPESGKTTVALHVAQAQKEGGIAAFIDAENALDPEYAKALGVNIDELLISQPDYGEQGLQIAEKLITSGAVDLV	155
NTDB id 269 KZH43 RS08665 WP 001085462.1	IEIYGPESGKTTVALHVAQAQKEGGIAAFIDAHALDPAYAAALGVNIDELLISQPDSGEQGLEIAGKLIDSGAVDLV	154
NTDB id 228 SPD RS09265 WP 001085462.1	IEIYGPESGKTTVALHVAQAQKEGGIAAFIDAHALDPAYAAALGVNIDELLISQPDSGEQGLEIAGKLIDSGAVDLV	154
NTDB id 194 SPR RS08825 WP 001085462.1	IEIYGPESGKTTVALHVAQAQKEGGIAAFIDAHALDPAYAAALGVNIDELLISQPDSGEQGLEIAGKLIDSGAVDLV	154
NTDB id 159 SP RS09750 WP 001085462.1	IEIYGPESGKTTVALHVAQAQKEGGIAAFIDAHALDPAYAAALGVNIDELLISQPDSGEQGLEIAGKLIDSGAVDLV	154
NTDB id 499 SM12261 RS08315 WP 078228268.1	IEIYGPESGKTTVALHVAQAQKEGGIAAFIDAHALDPAYAAALGVNIDELLISQPDSGEQGLEIAGKLIDSGAVDLV	154
NTDB id 527 SMSK321 RS11065 WP 001085454.1	IEIYGPESGKTTVALHVAQAQKEGGIAAFIDAHALDPAYAAALGVNIDELLISQPDSGEQGLEIAGKLIDSGAVDLV	154
NTDB id 26635 SSUBM407 RS00370 WP 011922545.1	IEIYGPESGKTTVALHVAQAQKDGGAIAAFIDAHALDPAYAAALGVNIDELLISQPDSGEQGLEIAGKLIDSGAVDLV	155
NTDB id 408 SMU RS09530 WP 002262392.1	VEIYGPESGKTTVALHVAQAQKDGGAIAAFIDAHALDPAYAAALGVNIDELLISQPDSGEQGLEIAGKLIDSGAVDLV	154
NTDB id 453 Spy49 1753c ACI62003.1	IEIYGPESGKTTVALHVAQAQKEGGIAAFIDAHALDPAYAAALGVNIDELLISQPDSGEQGLEIAGKLIDSGAVDLV	154
NTDB id 115 BSU 16940 NP 389576.2	IEIYGPESGKTTVALHVAQAQKEGGIAAFIDAHALDPAYAAALGVNIDELLISQPDSGEQGLEIAGKLIDSGAVDLV	154
NTDB id 625 LCA RS02525 WP 011374196.1	IEIYGPESGKTTVALHVAQAQKEGGIAAFIDAHALDPVYAKLGVNIDELLISQPDTGEQALEIAEALVRSGAVDIV	139
NTDB id 1313 DR RS12030 WP 010888966.1	VEIYGPESGKTTVALHVAQAQKEGGIAAFIDAENALDMPKYATALGVNIDELLISQPDTGEQGLEIADALVSSGAVDIV	141
NTDB id 1245 Cj1673c YP 002345041.1	TEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDPVYARALGVNIDELLISQPDNGEQALEIMELLVRSGAVDIV	153
NTDB id 1211 C694 RS00795 WP 000963128.1	IEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDVKYAKNLGVNIDELLISQPDNGEQALEIIVETIARSGAVDLI	140
NTDB id 1214 NCTC11637 00359 SQJ03206.1	IEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDVHYAKRLGVNIDENLLVSQPDTEQALEIILETITRSGGIDLV	142
NTDB id 1334 RAOC RS04870 WP 004918236.1	IEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDVHYAKRLGVNIDENLLVSQPDTEQALEIILETITRSGGIDLV	142
NTDB id 1389 A4U84 RS07560 WP 021112712.1	VEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDVMHYAEKLGINLEELIVSQPDNGEQALEIADSLTRSGGVDIV	149
NTDB id 1130 NGFG RS03960 WP 003688695.1	VEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDPVYARNLGVNIDELLISQPDNGEQALEICDALVRSGAVDIV	157
NTDB id 1124 NGFG RS03960 WP 003688695.1	VEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDPVYARKLGVNIDENLLVSQPDTEQALEICDTLVRSGGIDMV	141
NTDB id 1123 OK783 RS03845 WP 003688695.1	VEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDPVYARKLGVNIDENLLVSQPDTEQALEICDTLVRSGGIDMV	141
NTDB id 1427 RS RS02760 WP 011000510.1	VEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDVTYADKLGKVPDLLISQPDTEQALEIADALVRSGSVDLI	149
NTDB id 1165 A1552VC RS01565 WP 000344154.1	VEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDPVYAKKLGVNIDELLVSQPDTEQALEICDALARSGAVDIV	140
NTDB id 1142 GTF74 RS11550 WP 000344154.1	VEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDPVYAKKLGVNIDELLVSQPDTEQALEICDALARSGAVDIV	140
NTDB id 1074 ABD1 RS10195 WP 000344167.1	IEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDPVYARKLGVNIDENLLVSQPDNGEQALEIADMLVRSGAVDLI	140
NTDB id 1022 ACIAD RS06390 WP 004925639.1	VEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDPVYARKLGVNIDENLLVSQPDHGEQALEIADMLVRSGAVDLI	140
NTDB id 1205 PSJM300 05545 AFN77183.1	VEIYGPESGKTTVALHVAQAQKAGGTCAFIDAHALDPVYAGKLGVNVDLLVSQPDTEQALEITDMLVRSNAVDVI	140
consensus	*!***!!!!*!!!!* ! **! !* ** !***!!!!*!! !!*****!***!!!!*!!*! * ** !***!!**	

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NTDB id 600 KW2 RS01765 WP 011675413.1	EKIGQGAEKAKNYLKEHQDVFEIDHKVRAAHGLIDDSEVAETEE...ETTASHTKAKAKKEEKAVETEEIELELED.	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	EKIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFLIDGEEVSEQDT...ENKKDEP...KKEEA..VNEEVPLDLGDE	381
NTDB id 228 SPD RS09265 WP 001085462.1	EKIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFLIDGEEVSEQDT...ENKKDEP...KKEEA..VNEEVPLDLGDE	381
NTDB id 194 SPR RS08825 WP 001085462.1	EKIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFLIDGEEVSEQDT...ENKKDEP...KKEEA..VNEEVPLDLGDE	381
NTDB id 159 SP RS09750 WP 001085462.1	EKIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFLIDGEEVSEQDT...ENKKDEP...KKEEA..VNEEVPLDLGDE	381
NTDB id 499 SM12261 RS08315 WP 078228268.1	EKIGQGSSENAKKYLADNPEIFDEIDHQVVRVQFGLIDGEEIAES...KKDEA...AQVDS..VNEEVTLDLGDE	377
NTDB id 527 SMSK321 RS11065 WP 001085454.1	EKIGQGSSENAKKYLADNPEVFAEIDHQVVRVQFGLIDGEEAAES...KKDEV...AQVDS..VNEEVTLDLGDE	377
NTDB id 26635 SSBM407 RS00370 WP 011922545.1	EKIGQGSSENAKKFLADNPAIFDEIDRKIRVHYGLIEADGVEEVAT...EEA.PVV...AE..EIQDVILDLGG	378
NTDB id 408 SMU RS09530 WP 002262392.1	EKIGQGSSENAKKFLADNPEIFDDIDHKVVRVQYGLIEEDNTEEKQS...SKEKETD...EK..ADKNLVLELDDT	378
NTDB id 453 Spy49 1753c ACI62003.1	EKIGQGSSENAKRYLADHPQLFDEIDRKVRVKFGLLEESEESAMA...VASEE...TDDLALDLNG	373
NTDB id 115 BSU 16940 NP 389576.2	ERLGGGRENAKQFLKENKDIMLMIQEIQREHYGLDNGGVVQQAE...ETQEELFEFE.E...	348
NTDB id 625 LCA RS02525 WP 011374196.1	ERIGQGRENAKNYLADHEDVEDEVRLKVRVAAAYGISDVPEEDLPTT...EDE.QINILPDDSTEE...	355
NTDB id 1313 DR RS12030 WP 01088966.1	ERIGQGKEKTIAIYIAERPEMEQEIRDRVMAAIRAGNAGEAPALAPAPAAPEAAEA...	363
NTDB id 1245 Cj1673c YP 002345041.1	KKLGGGRENASKAFLKENPEIADDEITKAIQNSMGI EGM I...SGSEDDE..GEE...	343
NTDB id 1211 C694 RS00795 WP 000963128.1	KKLGGGRENAKALLKEDKALADEITLKI KESIGSNEEI...MPLPDEP..LEEME...	347
NTDB id 1214 NCTC11637 00359 SQJ03206.1	KKLGGGRENAKALLKEDKALADEITLKI KESIGSNEEI...MPLPDEP..LEEME...	347
NTDB id 1334 RAOC RS04870 WP 004918236.1	TKLGGGRDTRV KELIKDNPELAEELEAKIREKLQAK...	343
NTDB id 1389 A4U84 RS07560 WP 021112712.1	TKIGQGGKNNAVKWLKENPEIADKLEQEIRNTLASNPNS...VLKATASDSNDESDVEE...FSEEL...	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	AKIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI...TEGTQDET...GE...RPEE...	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	AKIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI...TEGTQDET...GE...RPEE...	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	AKIGQGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHI...TEGTQDET...GE...RPEE...	348
NTDB id 1427 RS RS02760 WP 011000510.1	ERIGQGRDNCREFLRENAELAREIENKVRHLGVTPMG...AV.TLAEVEVED...	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	DKIGQGGKANACKYLKENPEIAKTLDKKLRMLLNPENM...QLIAETSSAADVVEFGA...VPEEF...	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	DKIGQGGKANACKYLKENPEIAKTLDKKLRMLLNPENM...QLIAETSSAADVVEFGA...VPEEF...	354
NTDB id 1074 ABD1 RS10195 WP 000344167.1	NKIGQGGKNNVIRYFEENNQIAEEIERNIREQLLTGTN...GAVQ.I.EDEEEDPD..L...LLES...	349
NTDB id 1022 ACIAD RS06390 WP 004925639.1	NKIGQGGKNNVIRYLEENPQISTEIEAVIREQLLTKASD...QTAA.HDETEEEDPD..L...LES...	349
NTDB id 1205 PSJM300 05545 AFN77183.1	SKIGQGGKANAAKYLEENPEIGQEIEQQIRAKLLVTSAN...TKATPVAEDLADAD..I...	347
consensus	***!!!***** ** ***** ***** ** ** *	

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NTDB id 600 KW2 RS01765 WP 011675413.1      . . . . . 387
NTDB id 269 KZH43 RS08665 WP 001085462.1    LEIEIEE 388
NTDB id 228 SPD RS09265 WP 001085462.1    LEIEIEE 388
NTDB id 194 SPR RS08825 WP 001085462.1    LEIEIEE 388
NTDB id 159 SP RS09750 WP 001085462.1     LEIEIEE 388
NTDB id 499 SM12261 RS08315 WP 078228268.1  LEIEIEE 384
NTDB id 527 SMSK321 RS11065 WP 001085454.1  LEIEIEE 384
NTDB id 26635 SSUBM407 RS00370 WP 011922545.1 IELED.. 383
NTDB id 408 SMU RS09530 WP 002262392.1     IELED.. 383
NTDB id 453 Spy49 1753c ACI62003.1        IEIED.. 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 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 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