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NTDB id 600 KW2 RS01765 WP 011675413.1	SVRLDVRGSTKIEEGS.GDNKTKI	GKIKTKVVK	NKVAPPFK	VALVDIM	FEGEGIS	STGEL	LNIA	VEEGTI	KKSGAW	FAYN	312									
NTDB id 269 KZH43 RS08665 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKE	TNMGKETK	KVVKNKVAPPFK	EAVVE	IMYGEGIS	KTGEL	LKIASD	LDI	IKKAGAW	YSYK	311									
NTDB id 228 SPD RS09265 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKE	TNMGKETK	KVVKNKVAPPFK	EAVVE	IMYGEGIS	KTGEL	LKIASD	LDI	IKKAGAW	YSYK	311									
NTDB id 194 SPR RS08825 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKE	TNMGKETK	KVVKNKVAPPFK	EAVVE	IMYGEGIS	KTGEL	LKIASD	LDI	IKKAGAW	YSYK	311									
NTDB id 159 SP RS09750 WP 001085462.1	SVRLDVRGNTQIKGTG.DQKE	TNMGKETK	KVVKNKVAPPFK	EAVVE	IMYGEGIS	KTGEL	LKIASD	LDI	IKKAGAW	YSYK	311									
NTDB id 527 SMSK321 RS11065 WP 001085454.1	SVRLDVRGNTQIKGTG.DQKE	TNMGKETK	KVVKNKVAPPFK	EAVVE	IMYGEGIS	KTGEL	LKIASD	LDI	IKKAGAW	YSYK	311									
NTDB id 499 SM12261 RS08315 WP 078228268.1	SVRLDVRGNTQIKGTG.DQKE	TNMGKETK	KVVKNKVAPPFK	EAVVE	IMYGEGIS	KTGEL	LKIASD	LDI	IKKAGAW	YSYK	311									
NTDB id 453 Spy49 1753c ACI62003.1	SVRLDVRGTTQIKGTG.EQK	DSNMGKETK	KVVKNKVAPPFK	VAEVE	IMYGEGIS	RTGEL	VKIASD	LDI	IQKAGAW	FSYN	311									
NTDB id 408 SMU RS09530 WP 002262392.1	SVRLDVRGNTQIKGTG.EQK	DSNMGKETK	KVVKNKVAPPFK	EAVVE	IMYGEGIS	RTGEL	VKIASD	LDI	IQKAGAW	FSYN	311									
NTDB id 115 BSU 16940 NP 389576.2	SVRLEVRRAEQLKQGN....	DVMGNKTKI	KVVKNKVAPPFR	TAEVD	IMYGEGIS	KEGE	IIDL	GLTELD	IVQKSG	SWYSYE	292									
NTDB id 625 LCA RS02525 WP 011374196.1	TVRLEVRRAETIKNGT....	DMIGNRAR	I	KVVKNKVAPPFK	VAEVD	IMYGG	GISRT	GEL	VDMAVEK	DIIN	SGSWYSY	294								
NTDB id 1313 DR RS12030 WP 010888966.1	SVRLDVRKIGQ....	PTKVGND	AVANTV	KTKTVKNKVA	APPFKE	VELAL	VYGG	KCFD	QLSD	LVGLA	ADMDI	IKKAGS	FYSY	307						
NTDB id 1245 Cj1673c YP 002345041.1	SVRLDVRKVAT....	L.KQNE	EPIGNRV	V	KVVKNKVAPPFR	QAEFD	VMF	GEGIS	RE	GEL	IDYGV	KLDI	VDKSGAW	FSYK	294					
NTDB id 1211 C694 RS00795 WP 000963128.1	SVRIDIRRIAS....	L.KQNE	QHIGNRA	K	KVVKNKVAPPFR	EAEFD	IMF	GEGIS	KEGE	I	IDYGV	KLDI	VDKSGAW	LSYQ	296					
NTDB id 1214 NCTC11637 00359 SQJ03206.1	SVRIDIRRIAA....	L.KQNE	QHIGNRA	K	KVVKNKVAPPFR	EAEFD	IMF	GEGIS	KEGE	I	IDYGV	KLDI	VDKSGAW	LSYQ	296					
NTDB id 1334 RAOC RS04870 WP 004918236.1	SVRIDIRRLSDTGKIKDKS	GEVIGNRT	K	KVVKNKVAPPFK	SAEFD	IMYGG	VSKV	GEL	LDVAT	DL	DI	IQKSG	SW	FSYQ	307					
NTDB id 1389 A4U84 RS07560 WP 021112712.1	SVRLDIRRCGV....	V.KDGD	EII	GSETK	V	KVVKNKVAPPFR	EVQFD	IMYGEGIS	RMN	ELL	ILAE	ANGF	IKKSGAW	FSYD	310					
NTDB id 1130 NGFG RS03960 WP 003688695.1	SVRLDIRRTGS....	I.KKGE	EVLGNETR	V	KV	I	KNKVAPPFR	QAEFD	ILY	GEGIS	WE	GEL	IDIG	VKNDI	IN	KS	GAWYSYN	294		
NTDB id 1124 NGFG RS03960 WP 003688695.1	SVRLDIRRTGS....	I.KKGE	EVLGNETR	V	KV	I	KNKVAPPFR	QAEFD	ILY	GEGIS	WE	GEL	IDIG	VKNDI	IN	KS	GAWYSYN	294		
NTDB id 1123 OK783 RS03845 WP 003688695.1	SVRLDIRRTGS....	I.KKGE	EVLGNETR	V	KV	I	KNKVAPPFR	QAEFD	ILY	GEGIS	WE	GEL	IDIG	VKNDI	IN	KS	GAWYSYN	294		
NTDB id 1427 RS RS02760 WP 011000510.1	SVRLDIRRIGS....	I.KKGE	EVVGNETR	V	KVVKNKVAPPFR	EAEFD	ILY	GACV	SR	EGE	I	IDL	GVEAK	VVEK	SGAW	YSYN	302			
NTDB id 1129201 FYC31 RS24205 WP 043082325.1	SVRLDIRRIGA....	V.KEGD	NVVGSETR	V	KVVKNK	I	AAPPFK	QAEFQ	ILY	GEGIN	NFL	GEL	VDL	GVKEK	L	TEK	AGAW	YSYN	295	
NTDB id 1165 A1552VC RS01565 WP 000344154.1	SVRLDIRRTGA....	I.KEGE	EVVGNETR	I	KVVKNK	I	AAPPFK	EANTQ	IMYGG	CFNR	EGE	IDL	GVKHK	MVEK	SGAW	YSYN	293			
NTDB id 1142 GTF74 RS11550 WP 000344154.1	SVRLDIRRTGA....	I.KEGE	EVVGNETR	I	KVVKNK	I	AAPPFK	EANTQ	IMYGG	CFNR	EGE	IDL	GVKHK	MVEK	SGAW	YSYN	293			
NTDB id 1022 ACIAD RS06390 WP 004925639.1	SVRLDIRRIGQ....	V.KEGD	EII	GSETK	V	KVVKNK	MAPPFR	EAEIFQ	ILY	GKGV	NQL	GEL	VDL	AVQQ	N	I	VQKAGAW	YSYQ	293	
NTDB id 1074 ABD1 RS10195 WP 000344167.1	SVRLDIRRIGQ....	V.KEGD	EII	GSETK	V	KVVKNK	MAPPFK	EAEIFQ	ILY	GKGV	NQL	GEL	VDL	AVQQ	N	I	VQKAGAW	YSYQ	293	
NTDB id 1205 PSJM300 05545 AFN77183.1	SVRLDIRRTGA....	V.KEGD	EVVVGSETR	V	KVVKNKVAPPFR	QAEFQ	ILY	GKGI	YR	NGE	I	IDL	GVQQ	GL	V	EK	SGAW	AYK	293	
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 078228268.1
 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 1313 DR RS12030 WP 010888966.1
 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 1129201 FYC31 RS24205 WP 043082325.1
 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

consensus



DEKIGGQA**E**KAKNYLKEHQDV**F**DEIDHKVRAAH**G**LDDSEVAETEETTASKTKAKAKKEEKAVETEEIELELED 387
 DEKIGGQ**S**ENAKKYLAEHP**E**IFDEIDKQVRSK**F**GIDGEEVSEQDTENKKDE . . . PKKEEA . . VNEEVPLDLGDELEIE 385
 DEKIGGQ**S**ENAKKYLAEHP**E**IFDEIDKQVRSK**F**GIDGEEVSEQDTENKKDE . . . PKKEEA . . VNEEVPLDLGDELEIE 385
 DEKIGGQ**S**ENAKKYLAEHP**E**IFDEIDKQVRSK**F**GIDGEEVSEQDTENKKDE . . . PKKEEA . . VNEEVPLDLGDELEIE 385
 DEKIGGQ**S**ENAKKYLADNP**E**VFAEIDHQV**R**VQ**F**GIDGEEAAE . . . SKKDE . . . VAQVDS . . VNEEVTLDLGDELEIE 381
 DEKIGGQ**S**ENAKKYLADNP**E**IFDEIDHQV**R**VQ**F**GIDGEEIAE . . . SKKDE . . . AAQVDS . . VNEEVTLDLGDELEIE 381
 GEKIGGQ**S**ENAKRYLADHP**Q**L**F**DEIDRK**V**RV**K**F**G**LLEEESEESAMAVASE E TDDLALDLNGIEIE 377
 GEKIGGQ**S**ENAKKFLADNP**E**IF**D**IDHKV**R**VQ**V**G**I**EEDNTEEKQSSKEK ETDEK . . ADKNLVLELDDTIELE 382
 EER**L**IGG**G**RENAK**Q**FLKEN**K**D**I**ML**M**I**Q**E**Q**I**R**E**H**Y**G**LDNNGVVQQAEETQEEL . EFE . E 348
 SERIGGQ**R**ENAKNYLADH**E**D**V**E**D**VRLK**V**RAAY**G**ISDVPEEDLPTTEDE . QI . NILPDDST EE 355
 DERIGGQ**K**EKT**I**AY**I**AER**P**EME**Q**E**I**RDR**V**MAA**I**RAGNAGEAPALAPAPAAPEAAEA 363
 DKK**L**IGG**G**RENA**S**KAF**L**KEN**P**E**I**A**D**E**I**TKA**I**QNS**M**G**I**EGMI SGSEDDGE E 343
 DKK**L**IGG**G**RENA**K**ALL**K**ED**K**AL**A**DE**I**TL**K**IK**E**S**I**CS**N**E**E**I MPLPDEPLE EME 347
 DKK**L**IGG**G**RENA**K**ALL**K**ED**K**AL**A**DE**I**TL**K**IK**E**S**I**CS**N**E**E**I MPLPDEPLE EME 347
 DT**K**LIGG**R**DT**V**K**E**L**I**K**D**NP**E**L**A**E**L**E**A**K**I**R**E**KL**Q**A**K** 343
 GTKIGG**C**K**N**NA**V**K**V**LKEN**P**E**I**A**D**K**L**E**Q**E**I**R**N**T**L**A**S**NP**N**S VLKATASDSNDESVDVEE . . FSEEL 372
 GAKIGG**K**DN**V**R**V**W**L**KEN**P**E**I**S**D**E**I**DA**K**I**R**AL**N**C**V**EM**H**I TEGTQ DETDGE . . RPEE 348
 GAKIGG**K**DN**V**R**V**W**L**KEN**P**E**I**S**D**E**I**DA**K**I**R**AL**N**C**V**EM**H**I TEGTQ DETDGE . . RPEE 348
 GAKIGG**K**DN**V**R**V**W**L**KEN**P**E**I**S**D**E**I**DA**K**I**R**AL**N**C**V**EM**H**I TEGTQ DETDGE . . RPEE 348
 GE**R**IGG**R**DN**C**RE**F**L**R**EN**A**E**L**ARE**I**EN**K**V**R**E**H**L**G**V**T**PM**G** AVTLAEV . EED 352
 GDKIGG**C**K**A**NA**I**SW**L**KEN**P**AA**A**KE**I**E**K**K**V**RE**L**LL**N**Q**D**D KPFAVD GNDAEE . . THEEF 352
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 GDKIGG**C**K**A**NA**C**K**Y**LKEN**P**E**I**A**K**T**L**D**K**K**L**RE**M**LL**N**P**E**N**M** QLIAETSSAADDVEFGA . . VPEEF 354
 GNKIGG**C**K**N**N**V**IR**Y**L**E**EN**P****C**I**S**T**E**I**E**AV**I**RE**Q**LL**T**K**A**S**D** QTAA . HDETEEPDLE S 349
 GNKIGG**C**K**N**N**V**IR**Y**F**E**EN**N****Q**I**A**E**I**ERN**I**RE**Q**LL**T**T**G**T**N** GAVQ . I . EDEEEDLLL ES 349
 GSKIGG**C**K**A**NA**A**K**Y**L**E**EN**P**E**I**G**Q**E**I**EQ**I**R**A**K**L**L**V**T**S**A**N** TKATPVAEDLADADI 347

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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 527 SMSK321 RS11065 WP 001085454.1 IEE 384
NTDB id 499 SM12261 RS08315 WP 078228268.1 IEE 384
NTDB id 453 Spy49 1753c ACI62003.1 D.. 378
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NTDB id 1129201 FYC31 RS24205 WP 043082325.1 ... 352
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NTDB id 1142 GTF74 RS11550 WP 000344154.1 ... 354
NTDB id 1022 ACIAD RS06390 WP 004925639.1 ... 349
NTDB id 1074 ABD1 RS10195 WP 000344167.1 ... 349
NTDB id 1205 PSJM300 05545 AFN77183.1 ... 347
consensus
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 non conserved
 similar
 ≥ 50% conserved