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NTDB id 1313 DR RS12030 WP 010888966.1
 NTDB id 350130 E1H31 RS06670 WP 003428218.1
 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 527 SMSK321 RS11065 WP 001085454.1
 NTDB id 499 SM12261 RS08315 WP 078228268.1
 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 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 1022 ACIAD RS06390 WP 004925639.1
 NTDB id 1074 ABD1 RS10195 WP 000344167.1
 NTDB id 1205 PSJM300 05545 AFN77183.1



IYGPESGGKTTI¹ALIAI¹V¹AQAQK¹AGGTC¹AFIDA¹EAHAL¹DPV¹YARAL¹GVNT¹DELL¹VSQPD¹NGEQALE¹IM¹ELL¹V¹RS¹GAI¹DV¹VVV¹ 155
 VYGPESGGKTTI¹ALSCV¹ASAQK¹DGGIA¹AFIDA¹EAHAL¹DPV¹YAKAL¹GVN¹DV¹DN¹L¹ISQPD¹TGEQALE¹IAE¹AL¹IR¹S¹GA¹ID¹IV¹I¹ 144
 IYGPESGGKTTI¹ALHAVA¹AAV¹QK¹EGGIA¹AFIDA¹EN¹ALDPEY¹AKAL¹GVN¹IDELL¹LSQPDY¹GEQGL¹QIA¹EKL¹IT¹SGAV¹DL¹VV¹I¹ 157
 IYGPESGGKTTI¹ALHAVA¹AQAQK¹EGGIA¹AFIDA¹EAHAL¹DPAY¹AAAAL¹GVN¹IDELL¹LSQPDS¹GEQGLE¹IAGK¹LID¹SGAV¹DL¹VV¹V¹ 156
 IYGPESGGKTTI¹ALHAVA¹AQAQK¹EGGIA¹AFIDA¹EAHAL¹DPAY¹AAAAL¹GVN¹IDELL¹LSQPDS¹GEQGLE¹IAGK¹LID¹SGAV¹DL¹VV¹V¹ 156
 IYGPESGGKTTI¹ALHAVA¹AQAQK¹EGGIA¹AFIDA¹EAHAL¹DPAY¹AAAAL¹GVN¹IDELL¹LSQPDS¹GEQGLE¹IAGK¹LID¹SGAV¹DL¹VV¹V¹ 156
 IYGPESGGKTTI¹ALHAVA¹AQAQK¹EGGIA¹AFIDA¹EAHAL¹DPAY¹AAAAL¹GVN¹IDELL¹LSQPDS¹GEQGLE¹IAGK¹LID¹SGAV¹DL¹VV¹V¹ 156
 IYGPESGGKTTI¹ALHAVA¹AQAQK¹EGGIA¹AFIDA¹EAHAL¹DPAY¹AAAAL¹GVN¹IDELL¹LSQPDS¹GEQGLE¹IAGK¹LID¹SGAV¹DL¹VV¹V¹ 156
 IYGPESGGKTTI¹ALHAVA¹AQAQK¹EGGIA¹AFIDA¹EAHAL¹DPAY¹AAAAL¹GVN¹IDELL¹LSQPDS¹GEQGLE¹IAGK¹LID¹SGAV¹DL¹VV¹V¹ 156
 IYGPESGGKTTI¹ALHAVA¹AEV¹QK¹GGTA¹AFIDA¹EAHAL¹DPV¹YAKL¹GVN¹IE¹ELL¹LSQPD¹TGEQALE¹IAE¹AL¹V¹RS¹GA¹VD¹IV¹V¹ 141
 IYGPESGGKTTI¹ALHAVA¹AEV¹QK¹GGTA¹Y¹IDAEN¹AMP¹KY¹ATAL¹GVN¹ID¹LL¹LSQPD¹TGEQGLE¹IA¹DAL¹V¹SS¹GA¹VD¹IL¹V¹V¹ 143
 IYGPESGGKTTI¹TLHI¹IAEC¹QK¹AGG¹VCAF¹IDA¹EAHAL¹DV¹KY¹AKN¹LGVN¹TDD¹LY¹VSQ¹PDF¹GEQALE¹IV¹ET¹IAR¹SGAV¹DL¹IV¹V¹ 142
 IYGPESGGKTTI¹SLHI¹IAEC¹QK¹NG¹VCAF¹IDA¹EAHAL¹DV¹H¹YAK¹RL¹GV¹DT¹EN¹LL¹VSQ¹PD¹TGEQALE¹ILE¹IT¹IR¹SG¹GD¹IL¹VV¹V¹ 144
 IYGPESGGKTTI¹SLHI¹IAEC¹QK¹NG¹VCAF¹IDA¹EAHAL¹DV¹H¹YAK¹RL¹GV¹DT¹EN¹LL¹VSQ¹PD¹TGEQALE¹ILE¹IT¹IR¹SG¹GD¹IL¹VV¹V¹ 144
 IYGPESGGKTTI¹TLHA¹IAEA¹QK¹VGG¹TAA¹AFIDA¹EAHAF¹DM¹HY¹AEK¹L¹GIN¹LE¹EL¹IV¹SQ¹PD¹NGEQALE¹IA¹D¹SL¹IR¹SG¹GV¹D¹IV¹V¹ 151
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 IFGPESGGKTTI¹CLEA¹V¹AQC¹QK¹NG¹VCAF¹VDA¹EAHAF¹DPV¹YARK¹LGV¹KVE¹E¹LY¹LSQ¹PD¹TGEQALE¹IC¹DTL¹V¹RS¹GG¹ID¹M¹VV¹V¹ 143
 IYGPESGGKTTI¹TLQV¹VAEM¹QK¹LG¹GTC¹AFIDA¹EAHAL¹DV¹TY¹ADK¹LGV¹KVP¹D¹LL¹ISQ¹PD¹TGEQALE¹IA¹DAL¹V¹RS¹GS¹VD¹LI¹V¹I¹ 151
 IFGPESGGKTTI¹TLEL¹IAAA¹Q¹REG¹KTC¹AFIDA¹EAHAL¹DPV¹YAKK¹LGVN¹IDELL¹VSQ¹PD¹TGEQALE¹IC¹DAL¹AR¹SGAV¹D¹IV¹V¹ 142
 IFGPESGGKTTI¹TLEL¹IAAA¹Q¹REG¹KTC¹AFIDA¹EAHAL¹DPV¹YAKK¹LGVN¹IDELL¹VSQ¹PD¹TGEQALE¹IC¹DAL¹AR¹SGAV¹D¹IV¹V¹ 142
 IYGPESGGKTTI¹MTLQ¹IAQC¹QK¹AGG¹TCAF¹IDA¹EAHAL¹DPQ¹YARK¹LGV¹DI¹DN¹LL¹VSQ¹PD¹HGEQALE¹IA¹DML¹V¹RS¹GA¹IDL¹IV¹V¹ 142
 IYGPESGGKTTI¹MTLQ¹IAQC¹QK¹SG¹GTC¹AFIDA¹EAHAL¹DPQ¹YARK¹LGV¹DI¹DN¹LL¹VSQ¹PD¹NGEQALE¹IA¹DML¹V¹RS¹GA¹IDL¹IV¹V¹ 142
 IYGPESGGKTTI¹TL¹SV¹IAAA¹Q¹RM¹GSTC¹AFVDA¹EAHAL¹DPD¹YAGK¹LGVN¹VDD¹LL¹VSQ¹PD¹TGEQALE¹IT¹DML¹V¹RS¹NA¹VD¹IV¹V¹ 142

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NTDB id 1313 DR RS12030 WP 010888966.1	IGQGK	EKT	IAY	IAE	RPE	MEQ	EIR	DRV	MAA	IRAG	NAGE	APAL	PAPAA	PEAAEA	363			
NTDB id 350130 E1H31 RS06670 WP 003428218.1	LGQG	REN	VKK	FLED	NLD	LTT	EID	EKV	RAF	YNL	NEE	HEES	GTSV	SKEI	VE.....	E.....	348			
NTDB id 600 KW2 RS01765 WP 011675413.1	IGQGA	EKA	KNYL	KEHQ	DVDF	EID	HKV	RAAH	GLD	DDSE	VAETE	EETT	ASKT	KAKA	KKEE	KAVET	EIELE	ED.....	387	
NTDB id 269 KZH43 RS08665 WP 001085462.1	IGQGS	ENAK	KYLA	EAHP	EIFD	EID	KQV	RSKF	GLI	DGEE	VSEQ	DTEN	KKDE	....	PKKEEA	..VNEE	VPLD	LDGDE	LEIEIEE	388
NTDB id 228 SPD RS09265 WP 001085462.1	IGQGS	ENAK	KYLA	EAHP	EIFD	EID	KQV	RSKF	GLI	DGEE	VSEQ	DTEN	KKDE	....	PKKEEA	..VNEE	VPLD	LDGDE	LEIEIEE	388
NTDB id 194 SPR RS08825 WP 001085462.1	IGQGS	ENAK	KYLA	EAHP	EIFD	EID	KQV	RSKF	GLI	DGEE	VSEQ	DTEN	KKDE	....	PKKEEA	..VNEE	VPLD	LDGDE	LEIEIEE	388
NTDB id 159 SP RS09750 WP 001085462.1	IGQGS	ENAK	KYLA	EAHP	EIFD	EID	KQV	RSKF	GLI	DGEE	VSEQ	DTEN	KKDE	....	PKKEEA	..VNEE	VPLD	LDGDE	LEIEIEE	388
NTDB id 527 SMSK321 RS11065 WP 001085454.1	IGQGS	ENAK	KYLA	DNPE	VFAE	IDH	QVR	VQFG	LID	GEE	AAE	....	SKKDE	....	VAQVDS	..VNEE	VTLD	LDGDE	LEIEIEE	384
NTDB id 499 SM12261 RS08315 WP 078228268.1	IGQGS	ENAK	KYLA	DNPE	VFAE	IDH	QVR	VQFG	LID	GEE	AAE	....	SKKDE	....	AAQVDS	..VNEE	VTLD	LDGDE	LEIEIEE	384
NTDB id 408 SMU RS09530 WP 002262392.1	IGQGS	ENAK	KFLA	DNPE	IFDD	IDH	KVR	VQYGL	IEE	DNTE	EKQS	SKEK	.....	ETDEK	..ADKN	LVLE	DDTIE	LED..	383	
NTDB id 453 Spy49 1753c ACI62003.1	IGQGS	ENAK	RYLAD	HPQL	FDEI	DRK	VRV	KFGL	LEE	SEEE	ESAM	AVASE	.....	E.....	.....	TDDL	ALDL	DNGIE	IED..	378
NTDB id 115 BSU 16940 NP 389576.2	LGQGR	ENAK	QFLK	ENKD	IMLM	IQEQ	IRE	HYGL	DNNG	VVQQ	AAEET	QEEL	..EFE	..E	.....	.....	.....	.....	.....	348
NTDB id 625 LCA RS02525 WP 011374196.1	IGQGR	ENAK	NYLAD	HED	VEDEV	RLK	VRA	AYGIS	SDV	PEED	LPTTE	DE	..QI	..NIL	PDD	ST....	EE	.....	.....	355
NTDB id 1245 Cj1673c YP 002345041.1	LGQGR	ENSKA	FLKEN	PEIA	DEIT	KAI	QNSM	GIE	GMI	SGSE	DD	..EGEE	.....	.....	.....	.....	.....	.....	.....	343
NTDB id 1211 C694 RS00795 WP 000963128.1	LGQGR	ENAK	ALLK	EDKAL	ADEIT	LKIK	ESIG	SNEE	I	MP	LPDE	..PLE	EM	..E	.....	.....	.....	.....	.....	347
NTDB id 1214 NCTC11637 00359 SQJ03206.1	LGQGR	ENAK	ALLK	EDKAL	ADEIT	LKIK	ESIG	SNEE	I	MP	LPDE	..PLE	EM	..E	.....	.....	.....	.....	.....	347
NTDB id 1334 RAOC RS04870 WP 004918236.1	LGQGR	DTV	KELIK	DNPE	LAEE	LEAK	IRE	KLQAK	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	343
NTDB id 1389 A4U84 RS07560 WP 021112712.1	IGQGN	NAV	KWLKEN	PEIAD	KLEQ	EIR	NTLA	SNPN	SVL	KATAS	DSNDE	ES	..DVEEF	.....	SEEEL	.....	.....	.....	.....	372
NTDB id 1130 NGFG RS03960 WP 003688695.1	IGQGN	NDN	VVWLKEN	PEISD	EIDAK	IRAL	NGV	EMH	ITE	GTQ	DET	DGER	.....	PEE	.....	.....	.....	.....	.....	348
NTDB id 1124 NGFG RS03960 WP 003688695.1	IGQGN	NDN	VVWLKEN	PEISD	EIDAK	IRAL	NGV	EMH	ITE	GTQ	DET	DGER	.....	PEE	.....	.....	.....	.....	.....	348
NTDB id 1123 OK783 RS03845 WP 003688695.1	IGQGN	NDN	VVWLKEN	PEISD	EIDAK	IRAL	NGV	EMH	ITE	GTQ	DET	DGER	.....	PEE	.....	.....	.....	.....	.....	348
NTDB id 1427 RS RS02760 WP 011000510.1	IGQGR	DNCR	EFLRE	NAEL	AREI	ENKV	REHL	GVTP	MGAV	TLA	..EEVEE	.....	.....	.....	.....	.....	.....	.....	.....	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	IGQGN	ANACK	YLKEN	PEIA	KTLD	KKLRE	MLLN	PNEM	QLIA	ETSSA	ADDV	..EFGAV	.....	PEEF	.....	.....	.....	.....	.....	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	IGQGN	ANACK	YLKEN	PEIA	KTLD	KKLRE	MLLN	PNEM	QLIA	ETSSA	ADDV	..EFGAV	.....	PEEF	.....	.....	.....	.....	.....	354
NTDB id 1022 ACIAD RS06390 WP 004925639.1	IGQGN	NNVIR	YLEEN	PQISTE	IEAV	IRE	QLLT	KASD	QTA	..HDETE	EEP	..DLL	.....	ES	.....	.....	.....	.....	.....	349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	IGQGN	NNVIR	YFEEN	NQIAE	EIERN	IRE	QLLT	TGTN	GA	VQ	..I	..EDEE	EP	..DLL	.....	LES	.....	.....	.....	349
NTDB id 1205 PSJM300 05545 AFN77183.1	IGQGN	ANA	AKYLE	ENPEI	GQEI	EQQ	IRAK	LLV	TSAN	T	KATP	V	AE	LD	ADA	..DI	347

consensus

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- X non conserved
- X similar
- X ≥ 50% conserved