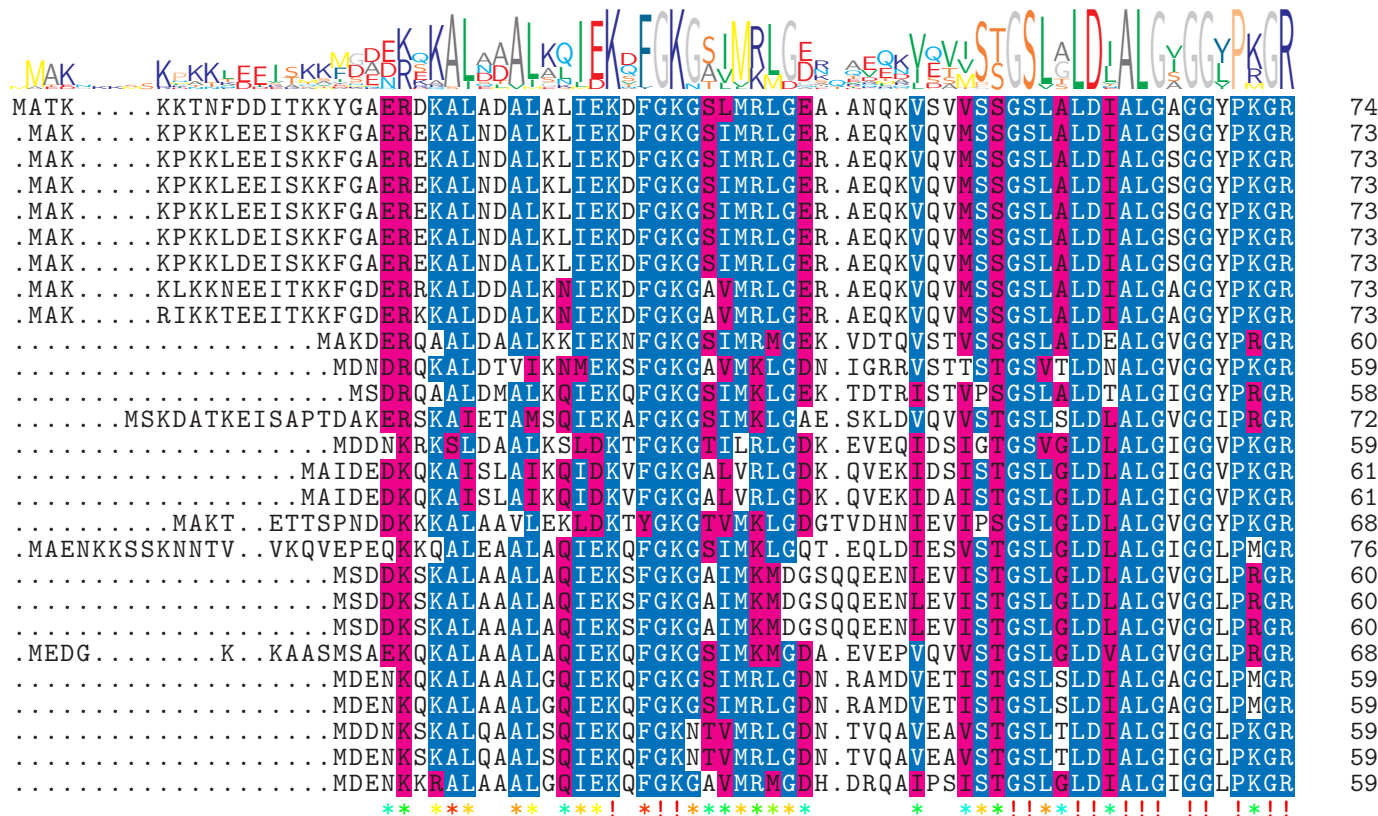


logo

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 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1040350 ACCK14 RS06415 WP 000368166.1
NTDB id 115 BSU 16940 NP 389576.2
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 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

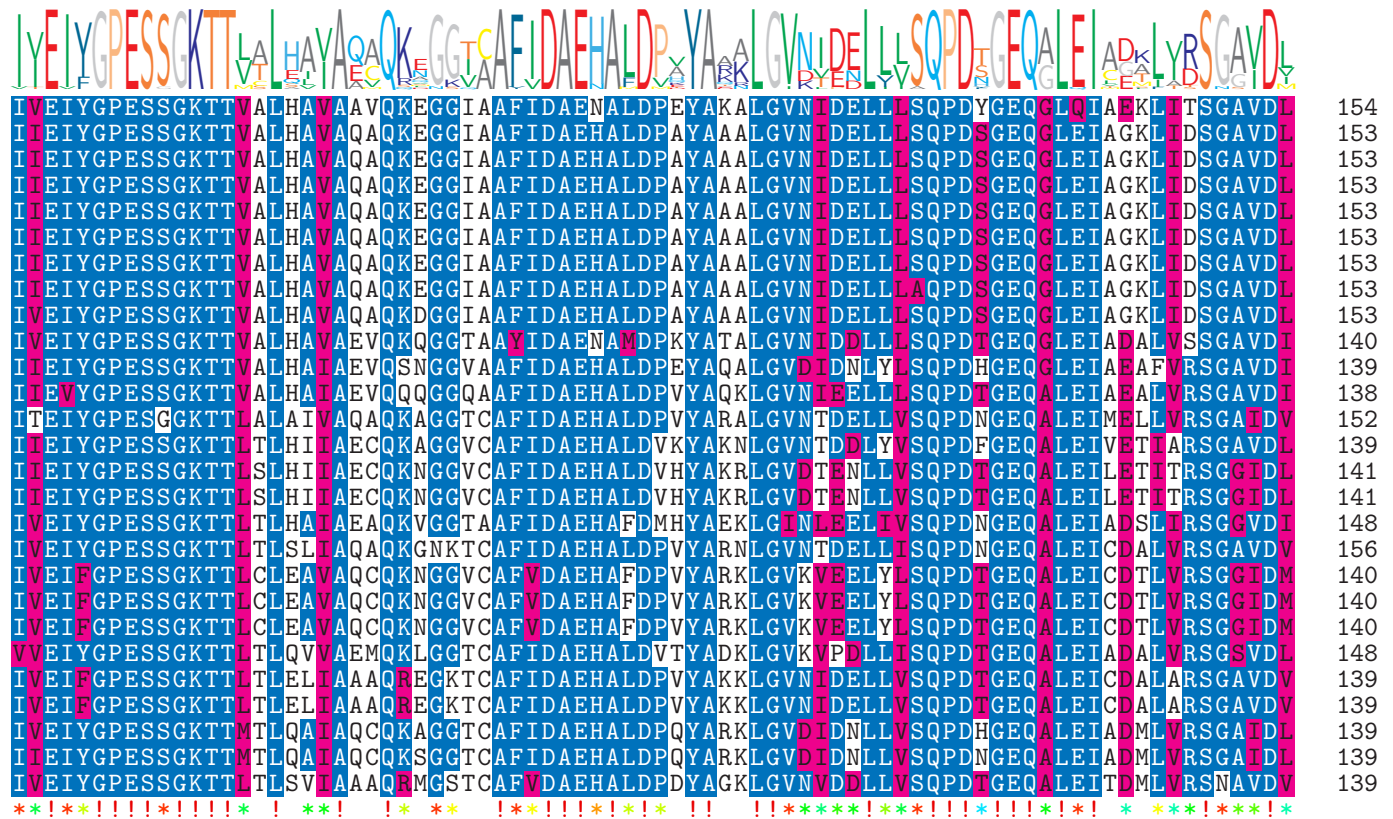
consensus



```

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 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1040350 ACCK14 RS06415 WP 000368166.1
NTDB id 115 BSU 16940 NP 389576.2
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 RA0C 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
consensus

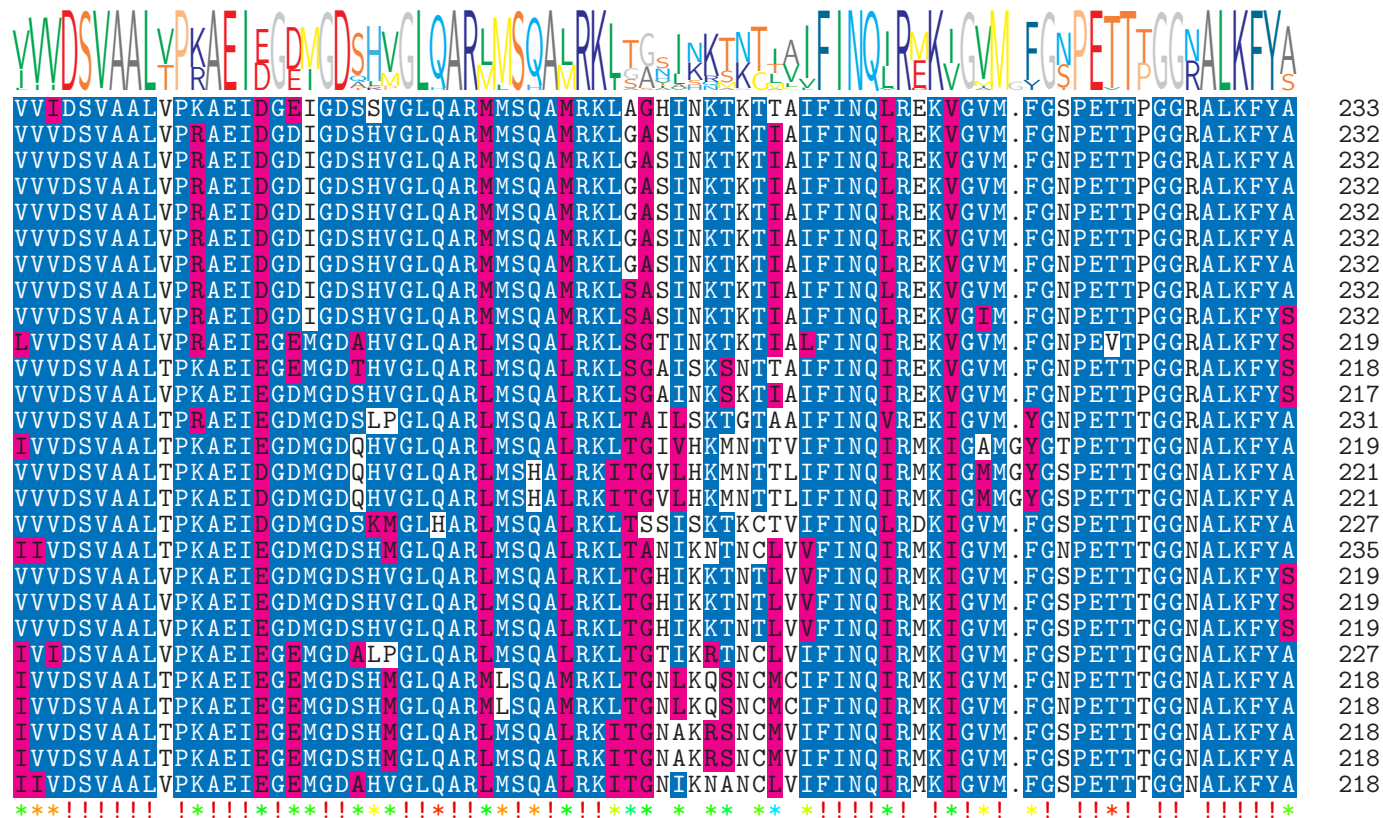
```



```

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 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1040350 ACCK14 RS06415 WP 000368166.1
NTDB id 115 BSU 16940 NP 389576.2
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 000418236.1
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
consensus

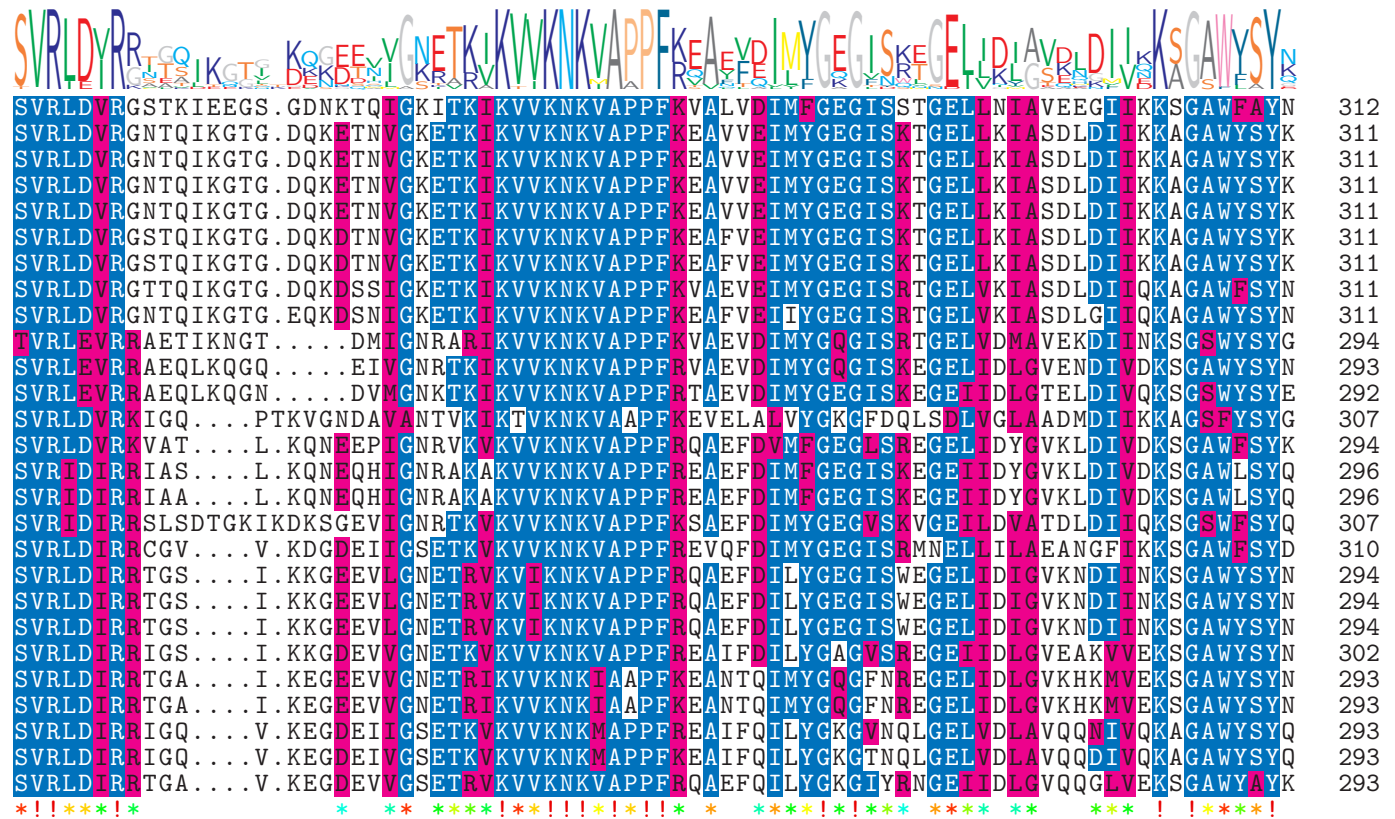
```



```

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 499 SM12261 RS08315 WP 078228268.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1040350 ACCK14 RS06415 WP 000368166.1
NTDB id 115 BSU 16940 NP 389576.2
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 RA0C 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
consensus

```



logo

NTDB id 600 KW2 RS01765 WP 011675413.1	DEKIGQGA	EKA	KNYL	KEHQ	DV	FEID	HKV	RAAH	GL	LDD	SEVA	ETE	EETT	ASKT	KAKAK	KKEEK	AVET	EEIE	LELED	.....	387																																																																																																																																																																																																																																																																																																																																																																																																					
NTDB id 269 KZH43 RS08665 WP 001085462.1	DEKIGQGS	ENAK	KYLA	EHPE	IF	FEID	KQV	RSKF	GL	IDG	EEV	SEQ	DTE	NKK	DE	....	PKKEE	A	VNEEV	PLDLG	DELEIE	385																																																																																																																																																																																																																																																																																																																																																																																																				
NTDB id 228 SPD RS09265 WP 001085462.1	DEKIGQGS	ENAK	KYLA	EHPE	IF	FEID	KQV	RSKF	GL	IDG	EEV	SEQ	DTE	NKK	DE	....	PKKEE	A	VNEEV	PLDLG	DELEIE	385																																																																																																																																																																																																																																																																																																																																																																																																				
NTDB id 194 SPR RS08825 WP 001085462.1	DEKIGQGS	ENAK	KYLA	EHPE	IF	FEID	KQV	RSKF	GL	IDG	EEV	SEQ	DTE	NKK	DE	....	PKKEE	A	VNEEV	PLDLG	DELEIE	385																																																																																																																																																																																																																																																																																																																																																																																																				
NTDB id 159 SP RS09750 WP 001085462.1	DEKIGQGS	ENAK	KYLA	EHPE	IF	FEID	KQV	RSKF	GL	IDG	EEV	SEQ	DTE	NKK	DE	....	PKKEE	A	VNEEV	PLDLG	DELEIE	385																																																																																																																																																																																																																																																																																																																																																																																																				
NTDB id 499 SM12261 RS08315 WP 078228268.1	DEKIGQGS	ENAK	KYL	ADN	PEIF	FEID	HQV	RVQF	GL	IDG	EE	IAES	....	KKDE	....	AAQVDS	..	VNEEV	TLDL	GDELEIE	381																																																																																																																																																																																																																																																																																																																																																																																																					
NTDB id 527 SMSK321 RS11065 WP 001085454.1	DEKIGQGS	ENAK	KYL	ADN	PEV	FAE	IDH	QV	RVQF	GL	IDG	EE	AAES	....	KKDE	....	VAQVDS	..	VNEEV	TLDL	GDELEIE	381																																																																																																																																																																																																																																																																																																																																																																																																				
NTDB id 453 Spy49 1753c ACI62003.1	GEKIGQGS	ENAK	RYL	ADH	PQL	F	DEID	RKV	RVKF	GL	LEE	SEEE	SAM	AVASE	.....	E	.....	TDD	LALD	LDN	GIEIE	377																																																																																																																																																																																																																																																																																																																																																																																																				
NTDB id 408 SMU RS09530 WP 002262392.1	GEKIGQGS	ENAK	KFL	ADN	PEIF	DD	IDH	KV	RVQY	GL	IEED	NTE	EKQ	SSKEK	.....	ETDEK	..	ADKN	LVLE	LDDT	IELE	382																																																																																																																																																																																																																																																																																																																																																																																																				
NTDB id 625 LCA RS02525 WP 011374196.1	SERIGQGS	ENAK	KNY	LADH	ED	VE	DEV	RLK	V	RAAY	GIS	DV	PEED	LPT	TEDE	QIN	ILP	DD	STEE	.....	355																																																																																																																																																																																																																																																																																																																																																																																																					
NTDB id 1040350 ACCK14 RS06415 WP 000368166.1	GERMGQGS	ENAK	KMYL	KEN	PQ	IK	EE	ID	RKL	REKL	GIS	DG	VEE	TEDA	...	PKSLF	DEE	.....	347																																																																																																																																																																																																																																																																																																																																																																																																							
NTDB id 115 BSU 16940 NP 389576.2	EERLGGGS	ENAK	QFL	KEN	KD	IM	LM	I	QEQ	IRE	HY	GL	DN	NG	VV	QQ	AE	ET	QEE	LE	FEE		348																																																																																																																																																																																																																																																																																																																																																																																																			
NTDB id 1313 DR RS12030 WP 010888966.1	DERIGQGS	KEKT	IA	YIA	ER	PE	ME	Q	EIR	DR	VMA	AIR	AG	NAGE	AP	AL	A	P	A	P	A	PE	AAAA		363																																																																																																																																																																																																																																																																																																																																																																																																	
NTDB id 1245 Cj1673c YP 002345041.1	DKKLGGGS	ENAK	FL	KEN	PEI	AD	EIT	K	A	I	Q	NS	M	G	I	E	G	M	I		SG	SEDD	..	EGEE		343																																																																																																																																																																																																																																																																																																																																																																																																
NTDB id 1211 C694 RS00795 WP 000963128.1	DKKLGGGS	ENAK	ALL	KED	KAL	AD	EIT	L	K	I	K	ES	I	G	S	N	E	E	I		MPL	PDE	..	PLEEME		347																																																																																																																																																																																																																																																																																																																																																																																																
NTDB id 1214 NCTC11637 00359 SQJ03206.1	DKKLGGGS	ENAK	ALL	KED	KAL	AD	EIT	L	K	I	K	ES	I	G	S	N	E	E	I		MPL	PDE	..	PLEEME		347																																																																																																																																																																																																																																																																																																																																																																																																
NTDB id 1334 RAOC RS04870 WP 004918236.1	DTKLGGGS	RD	TV	KEL	I	K	N	P	E	L	A	E	E	L	A	K	I	R	E	K	L	Q	A	K		343																																																																																																																																																																																																																																																																																																																																																																																																
NTDB id 1389 A4U84 RS07560 WP 021112712.1	GTKIGQGS	KNN	AV	KW	L	K	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	..	V	E	E	F	S	E	E	E	L		372																																																																																																																																																																																																																																																																																																																																																																				
NTDB id 1130 NGFG RS03960 WP 003688695.1	GAKIGQGS	KDN	VR	V	L	K	N	P	E	I	S	D	E	I	A	K	I	R	A	L	N	G	V	E	M	H	I		T	E	G	T	Q	D	E	T	D	G	E	R		PEE		348																																																																																																																																																																																																																																																																																																																																																																														
NTDB id 1124 NGFG RS03960 WP 003688695.1	GAKIGQGS	KDN	VR	V	L	K	N	P	E	I	S	D	E	I	A	K	I	R	A	L	N	G	V	E	M	H	I		T	E	G	T	Q	D	E	T	D	G	E	R		PEE		348																																																																																																																																																																																																																																																																																																																																																																														
NTDB id 1123 OK783 RS03845 WP 003688695.1	GAKIGQGS	KDN	VR	V	L	K	N	P	E	I	S	D	E	I	A	K	I	R	A	L	N	G	V	E	M	H	I		T	E	G	T	Q	D	E	T	D	G	E	R		PEE		348																																																																																																																																																																																																																																																																																																																																																																														
NTDB id 1427 RS RS02760 WP 011000510.1	GERIGQGS	RDN	C	R	E	F	L	R	E	N	A	E	L	A	R	E	I	E	N	K	V	R	E	H	L	G	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	GDKIGQGS	KAN	A	C	K	Y	L	K	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																																																																																																																																																																																																																																																																																																																																																																		
NTDB id 1142 GTF74 RS11550 WP 000344154.1	GDKIGQGS	KAN	A	C	K	Y	L	K	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																																																																																																																																																																																																																																																																																																																																																																		
NTDB id 1022 ACIAD RS06390 WP 004925639.1	GNKIGQGS	KNN	V	I	R	Y	L	E	N	P	Q	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 1074 ABD1 RS10195 WP 000344167.1	GNKIGQGS	KNN	V	I	R	Y	L	E	N	P	Q	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	GSKIGQGS	KAN	A	K	Y	L	E	N	P	E	I	G	Q	E	I	E	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	***	!!!	*****	***	*****	*****	*****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***</

consensus

!!!*** ** ***** ***** ** *

logo

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 625 LCA RS02525 WP 011374196.1	...	355
NTDB id 1040350 ACCK14 RS06415 WP 000368166.1	...	347
NTDB id 115 BSU 16940 NP 389576.2	...	348
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 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		

-  non conserved
-  similar
-  ≥ 50% conserved