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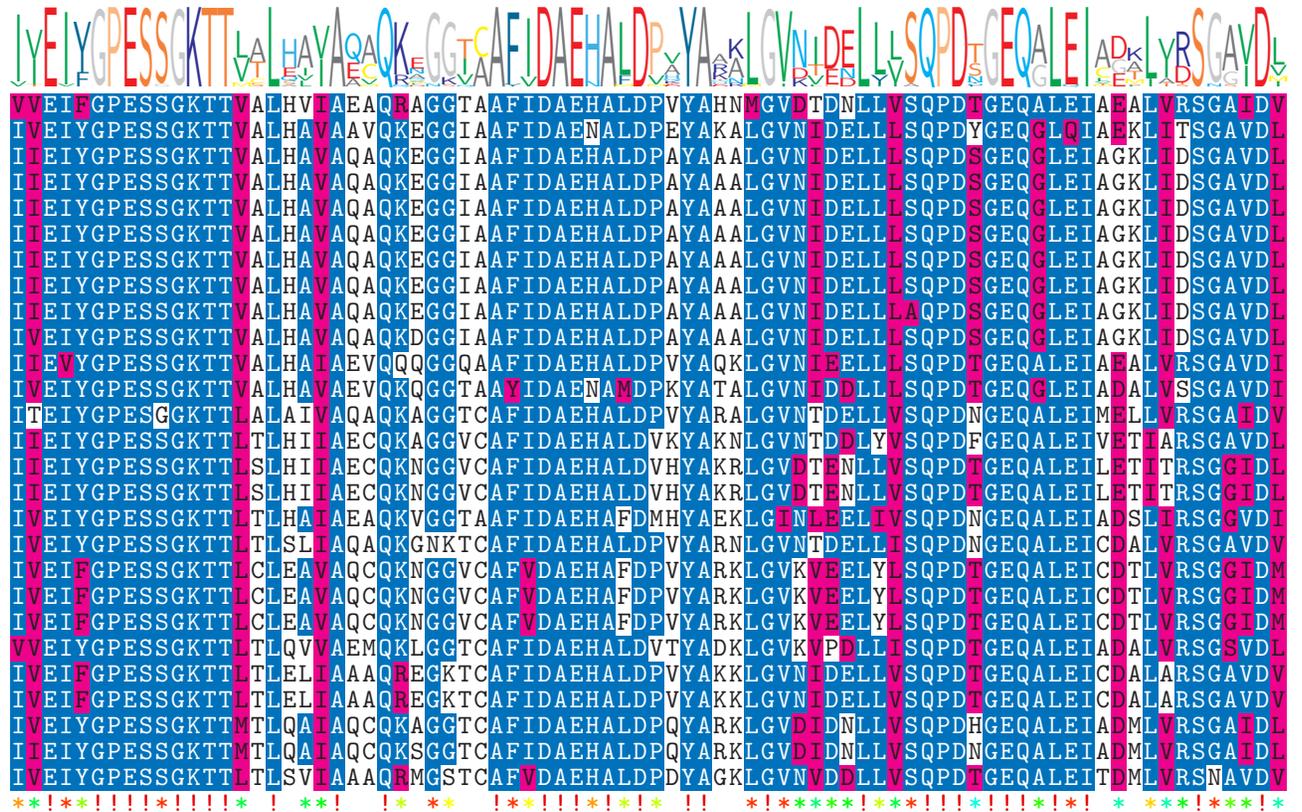


NTDB id 86721	NGH78	RS06265	WP 109206143.1	.....M	KRVVLT	E	Q	R	A	L	E	N	A	L	S	Q	I	E	R	H	F	G	K	G	S	I	M	R	L	G	E	T	G	A	R	L	N	V	D	A	I	A	T	G	A	L	P	L	D	I	A	L	G	V	G	G	L	P	R	G	R	64														
NTDB id 600	KW2	RS01765	WP 011675413.1	MATKK	....	K	T	N	F	D	D	I	T	K	K	Y	G	A	E	R	D	K	A	L	A	D	A	L	A	L	I	E	K	D	F	G	K	G	S	L	M	R	L	G	E	A	A	N	.Q	K	V	S	V	V	S	S	G	S	L	A	L	D	I	A	L	G	A	G	G	Y	P	K	G	R	74	
NTDB id 269	KZH43	RS08665	WP 001085462.1	.MAKK	....	P	K	K	L	E	E	I	S	K	K	F	G	A	E	R	E	K	A	L	N	D	A	L	K	L	I	E	K	D	F	G	K	G	S	I	M	R	L	G	E	R	A	E	.Q	K	V	Q	V	M	S	S	G	S	L	A	L	D	I	A	L	G	S	G	G	Y	P	K	G	R	73	
NTDB id 228	SPD	RS09265	WP 001085462.1	.MAKK	....	P	K	K	L	E	E	I	S	K	K	F	G	A	E	R	E	K	A	L	N	D	A	L	K	L	I	E	K	D	F	G	K	G	S	I	M	R	L	G	E	R	A	E	.Q	K	V	Q	V	M	S	S	G	S	L	A	L	D	I	A	L	G	S	G	G	Y	P	K	G	R	73	
NTDB id 194	SPR	RS08825	WP 001085462.1	.MAKK	....	P	K	K	L	E	E	I	S	K	K	F	G	A	E	R	E	K	A	L	N	D	A	L	K	L	I	E	K	D	F	G	K	G	S	I	M	R	L	G	E	R	A	E	.Q	K	V	Q	V	M	S	S	G	S	L	A	L	D	I	A	L	G	S	G	G	Y	P	K	G	R	73	
NTDB id 159	SP	RS09750	WP 001085462.1	.MAKK	....	P	K	K	L	E	E	I	S	K	K	F	G	A	E	R	E	K	A	L	N	D	A	L	K	L	I	E	K	D	F	G	K	G	S	I	M	R	L	G	E	R	A	E	.Q	K	V	Q	V	M	S	S	G	S	L	A	L	D	I	A	L	G	S	G	G	Y	P	K	G	R	73	
NTDB id 499	SM12261	RS08315	WP 078228268.1	.MAKK	....	P	K	K	L	E	E	I	S	K	K	F	G	A	E	R	E	K	A	L	N	D	A	L	K	L	I	E	K	D	F	G	K	G	S	I	M	R	L	G	E	R	A	E	.Q	K	V	Q	V	M	S	S	G	S	L	A	L	D	I	A	L	G	S	G	G	Y	P	K	G	R	73	
NTDB id 527	SMSK321	RS11065	WP 001085454.1	.MAKK	....	P	K	K	L	E	E	I	S	K	K	F	G	A	E	R	E	K	A	L	N	D	A	L	K	L	I	E	K	D	F	G	K	G	S	I	M	R	L	G	E	R	A	E	.Q	K	V	Q	V	M	S	S	G	S	L	A	L	D	I	A	L	G	S	G	G	Y	P	K	G	R	73	
NTDB id 453	Spy49	1753c	ACI62003.1	.MAKK	....	L	K	K	N	E	E	I	T	K	K	F	G	D	E	R	R	K	A	L	D	D	A	L	K	N	I	E	K	D	F	G	K	G	A	V	M	R	L	G	E	R	A	E	.Q	K	V	Q	V	M	S	S	G	S	L	A	L	D	I	A	L	G	A	G	G	Y	P	K	G	R	73	
NTDB id 408	SMU	RS09530	WP 002262392.1	.MAKR	....	I	K	K	T	E	E	I	T	K	K	F	G	D	E	R	K	K	A	L	D	D	A	L	K	N	I	E	K	D	F	G	K	G	A	V	M	R	L	G	E	R	A	E	.Q	K	V	Q	V	M	S	S	G	S	L	A	L	D	I	A	L	G	A	G	G	Y	P	K	G	R	73	
NTDB id 115	BSU	16940	NP 389576.2	.....	M	S	D	R	Q	A	A	L	D	M	A	L	K	Q	I	E	K	Q	F	G	K	G	S	I	M	K	L	G	E	K	T	D	.T	R	I	S	T	V	P	S	G	S	L	A	L	D	T	A	L	G	I	G	G	Y	P	R	G	R	58													
NTDB id 625	LCA	RS02525	WP 011374196.1	.....	M	A	K	D	E	R	Q	A	A	L	D	A	A	L	K	I	E	K	N	F	G	K	G	S	I	M	R	M	G	E	K	V	D	.T	Q	V	S	T	V	S	S	G	S	L	A	L	D	E	A	L	G	V	G	G	Y	P	R	G	R	60												
NTDB id 1313	DR	RS12030	WP 010888966.1	.....	M	S	K	D	A	T	K	E	I	S	A	P	T	D	A	K	E	R	S	K	A	I	E	T	A	M	S	Q	I	E	A	F	G	K	G	S	I	M	K	L	G	A	E	.S	K	L	D	V	Q	V	V	S	T	G	S	L	S	L	D	I	A	L	G	V	G	G	I	P	R	G	R	72
NTDB id 1245	Cj1673c	YP 002345041.1	.....	M	D	D	N	K	R	K	S	L	D	A	A	L	K	S	L	D	K	T	F	G	K	T	I	L	R	L	G	D	K	.E	V	E	Q	I	D	S	I	G	T	G	S	V	G	L	D	I	A	L	G	I	G	V	P	K	G	R	59															
NTDB id 1214	NCTC11637	00359	SQJ03206.1	.....	M	A	I	D	E	D	K	Q	K	A	I	S	L	A	I	K	Q	I	D	K	V	F	G	K	G	A	L	V	R	L	G	D	K	.Q	V	E	K	I	D	A	I	S	T	G	S	L	G	L	D	I	A	L	G	I	G	V	P	K	G	R	61											
NTDB id 1211	C694	RS00795	WP 000963128.1	.....	M	A	I	D	E	D	K	Q	K	A	I	S	L	A	I	K	Q	I	D	K	V	F	G	K	G	A	L	V	R	L	G	D	K	.Q	V	E	K	I	D	S	I	S	T	G	S	L	G	L	D	I	A	L	G	I	G	V	P	K	G	R	61											
NTDB id 1334	RAOC	RS04870	WP 004918236.1	.....	M	A	K	T	.E	T	T	S	P	N	D	K	K	K	A	A	V	L	E	K	L	D	K	T	Y	G	K	G	T	V	M	K	L	G	D	.G	T	V	D	H	N	I	E	V	I	P	S	G	S	L	G	L	D	I	A	L	G	V	G	G	Y	P	K	G	R	68						
NTDB id 1389	A4U84	RS07560	WP 021112712.1	.MAEN	K	K	S	S	K	N	N	T	V	.V	K	Q	V	E	P	E	Q	K	Q	A	L	E	A	A	L	A	Q	I	E	K	Q	F	G	K	G	S	I	M	K	L	G	Q	T	.E	Q	L	D	I	E	S	V	S	T	G	S	L	G	L	D	I	A	L	G	I	G	L	P	M	G	R	76	
NTDB id 1130	NGFG	RS03960	WP 003688695.1	.....	M	S	D	D	K	S	K	A	L	A	A	A	L	A	Q	I	E	K	S	F	G	K	G	A	I	M	K	M	D	G	S	Q	Q	E	E	N	L	E	V	I	S	T	G	S	L	G	L	D	I	A	L	G	V	G	L	P	R	G	R	60												
NTDB id 1124	NGFG	RS03960	WP 003688695.1	.....	M	S	D	D	K	S	K	A	L	A	A	A	L	A	Q	I	E	K	S	F	G	K	G	A	I	M	K	M	D	G	S	Q	Q	E	E	N	L	E	V	I	S	T	G	S	L	G	L	D	I	A	L	G	V	G	L	P	R	G	R	60												
NTDB id 1123	OK783	RS03845	WP 003688695.1	.....	M	S	D	D	K	S	K	A	L	A	A	A	L	A	Q	I	E	K	S	F	G	K	G	A	I	M	K	M	D	G	S	Q	Q	E	E	N	L	E	V	I	S	T	G	S	L	G	L	D	I	A	L	G	V	G	L	P	R	G	R	60												
NTDB id 1427	RS	RS02760	WP 011000510.1	.MEDG	.....	K	.K	A	A	S	M	S	A	E	K	Q	K	A	L	A	A	A	L	A	Q	I	E	K	Q	F	G	K	G	S	I	M	K	M	G	D	.E	V	E	P	V	Q	V	V	S	T	G	S	L	G	L	D	V	A	L	G	V	G	L	P	R	G	R	68								
NTDB id 1165	A1552VC	RS01565	WP 000344154.1	.....	M	D	E	N	K	Q	K	A	L	A	A	A	L	G	Q	I	E	K	Q	F	G	K	G	S	I	M	R	L	G	D	N	.R	A	M	D	V	E	T	I	S	T	G	S	L	S	L	D	I	A	L	G	A	G	L	P	M	G	R	59													
NTDB id 1142	GTF74	RS11550	WP 000344154.1	.....	M	D	E	N	K	Q	K	A	L	A	A	A	L	G	Q	I	E	K	Q	F	G	K	G	S	I	M	R	L	G	D	N	.R	A	M	D	V	E	T	I	S	T	G	S	L	S	L	D	I	A	L	G	A	G	L	P	M	G	R	59													
NTDB id 1022	ACIAD	RS06390	WP 004925639.1	.....	M	D	D	N	K	S	K	A	L	Q	A	A	L	S	Q	I	E	K	Q	F	G	K	N	T	V	M	R	L	G	D	N	.T	V	Q	A	V	E	A	V	S	T	G	S	L	T	L	D	I	A	L	G	I	G	L	P	K	G	R	59													
NTDB id 1074	ABD1	RS10195	WP 000344167.1	.....	M	D	E	N	K	S	K	A	L	Q	A	A	L	S	Q	I	E	K	Q	F	G	K	N	T	V	M	R	L	G	D	N	.T	V	Q	A	V	E	A	V	S	T	G	S	L	T	L	D	I	A	L	G	I	G	L	P	K	G	R	59													
NTDB id 1205	PSJM300	05545	AFN77183.1	.....	M	D	E	N	K	K																																																																		

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NTDB id 86721 NGH78 RS06265 WP 109206143.1  
 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 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 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 1214 NCTC11637 00359 SQJ03206.1  
 NTDB id 1211 C694 RS00795 WP 000963128.1  
 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

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NTDB id 86721	NGH78	RS06265	WP 109206143.1	SVRLDVRKIEQLKAGT....EI	IGSRTRV	KVVKNKVAPPFRQAEFD	IIYGRGIDREGCLIDMGVDLDIV	KKSGAWYSLG	298		
NTDB id 600	KW2	RS01765	WP 011675413.1	SVRLDVRGSTKIEEGS.GDNKTQ	IGKITK	KVVKNKVAPPFKVALVDIM	FGEGISSTGELLNIAVEEGI	KKSGAWFAYN	312		
NTDB id 269	KZH43	RS08665	WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETK	KVVKNKVAPPFKEAVVEIM	YGEGISKTGELLKIASDLDI	KKAGAWYSYK	311		
NTDB id 228	SPD	RS09265	WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETK	KVVKNKVAPPFKEAVVEIM	YGEGISKTGELLKIASDLDI	KKAGAWYSYK	311		
NTDB id 194	SPR	RS08825	WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETK	KVVKNKVAPPFKEAVVEIM	YGEGISKTGELLKIASDLDI	KKAGAWYSYK	311		
NTDB id 159	SP	RS09750	WP 001085462.1	SVRLDVRGNTQIKGTG.DQKETN	VGKETK	KVVKNKVAPPFKEAVVEIM	YGEGISKTGELLKIASDLDI	KKAGAWYSYK	311		
NTDB id 499	SM12261	RS08315	WP 078228268.1	SVRLDVRGSTQIKGTG.DQKDTN	VGKETK	KVVKNKVAPPFKEAFVEIM	YGEGISKTGELLKIASDLDI	KKAGAWYSYK	311		
NTDB id 527	SMSK321	RS11065	WP 001085454.1	SVRLDVRGSTQIKGTG.DQKDTN	VGKETK	KVVKNKVAPPFKEAFVEIM	YGEGISKTGELLKIASDLDI	KKAGAWYSYK	311		
NTDB id 453	Spy49	1753c	ACI62003.1	SVRLDVRGTTQIKGTG.DQKDS	IGKETK	KVVKNKVAPPFKVAEVEIM	YGEGISRTGELVKIASDLDI	QKAGAWFSYN	311		
NTDB id 408	SMU	RS09530	WP 002262392.1	SVRLDVRGNTQIKGTG.EQKDSN	IGKETK	KVVKNKVAPPFKEAFVEI	IYEGISRTGELVKIASDLGI	IQKAGAWYSYN	311		
NTDB id 115	BSU	16940	NP 389576.2	SVRLDVRRAEQLKQGN.....D	VMGNKTK	KVVKNKVAPPFR	TAEVDIMYGGISKEGEI	IDLGTELD	IVQKSGSWYSYE	292	
NTDB id 625	LCA	RS02525	WP 011374196.1	TVRLDVRRAEQLKQGN.....D	VMGNKTK	KVVKNKVAPPFR	TAEVDIMYGGISKEGEI	IDLGTELD	IVQKSGSWYSYE	292	
NTDB id 1313	DR	RS12030	WP 010888966.1	SVRLDVRKIGQ....PTKVGND	AVANTVK	IKTVKNKVAAPFKEVELAL	VYGGKGFQDQLSDLVGLA	ADMDI	IKKAGSFYSYK	307	
NTDB id 1245	Cj1673c	YP 002345041.1		SVRLDVRKIVAT....L.KQNE	EPIGNRV	VVVKNKVAPPFRQAEFD	VMFGEGLSREGELIDYGV	KLDIV	DKSGAWFSYK	294	
NTDB id 1214	NCTC11637	00359	SQJ03206.1	SVRIDIRRIAA....L.KQNE	EQHIGNRA	KAQVVKNKVAPPFR	EAFFDIMFGEGISKEGEI	IDYGVKLD	IVDKSGAWLSYQ	296	
NTDB id 1211	C694	RS00795	WP 000963128.1	SVRIDIRRIAS....L.KQNE	EQHIGNRA	KAQVVKNKVAPPFR	EAFFDIMFGEGISKEGEI	IDYGVKLD	IVDKSGAWLSYQ	296	
NTDB id 1334	RAOC	RS04870	WP 004918236.1	SVRIDIRRLS	SDTGKIKDKSGEV	IGNRTK	VVVKNKVAPPFKSAEFD	IMYGGVSKVGEILD	VATDLDI	IQKSGSWFSYQ	307
NTDB id 1389	A4U84	RS07560	WP 021112712.1	SVRLDIRRCGV....V.KDG	DEIIG	SETKVVVVKNKVAPPFR	EVQFDIMYGGISRMNELL	ILAEANGFI	KKSGAWFSYD	310	
NTDB id 1130	NGFG	RS03960	WP 003688695.1	SVRLDIRRTGS....I.KKG	EEVLGN	ETRVKVIKNKVAPPFR	QAEFDILYGGISWEGELID	IGVKNDI	INKSGAWYSYN	294	
NTDB id 1124	NGFG	RS03960	WP 003688695.1	SVRLDIRRTGS....I.KKG	EEVLGN	ETRVKVIKNKVAPPFR	QAEFDILYGGISWEGELID	IGVKNDI	INKSGAWYSYN	294	
NTDB id 1123	OK783	RS03845	WP 003688695.1	SVRLDIRRTGS....I.KKG	EEVLGN	ETRVKVIKNKVAPPFR	QAEFDILYGGISWEGELID	IGVKNDI	INKSGAWYSYN	294	
NTDB id 1427	RS	RS02760	WP 011000510.1	SVRLDIRRIGS....I.KKG	DEVVGN	ETKVVVVKNKVAPPFR	EAFDILYGGISWEGELID	IGVKNDI	INKSGAWYSYN	302	
NTDB id 1165	A1552VC	RS01565	WP 000344154.1	SVRLDIRRTGA....I.KEG	EEVVG	NETRIKVVKNKIAAPF	KEANTQIMYGGGFNREGEL	IDLGVKHKM	VEKSGAWYSYN	293	
NTDB id 1142	GTF74	RS11550	WP 000344154.1	SVRLDIRRTGA....I.KEG	EEVVG	NETRIKVVKNKIAAPF	KEANTQIMYGGGFNREGEL	IDLGVKHKM	VEKSGAWYSYN	293	
NTDB id 1022	ACIAD	RS06390	WP 004925639.1	SVRLDIRRIGQ....V.KEG	DEIVG	SETKVVVVKNKMAPPF	FREAFQILYGGKVNQLGEL	VDLAVQQN	IVQKAGAWYSYQ	293	
NTDB id 1074	ABD1	RS10195	WP 000344167.1	SVRLDIRRIGQ....V.KEG	DEIVG	SETKVVVVKNKMAPPF	FREAFQILYGGKVNQLGEL	VDLAVQQN	IVQKAGAWYSYQ	293	
NTDB id 1205	PSJM300	05545	AFN77183.1	SVRLDIRRTGA....V.KEG	DEVVGS	ETRVVVKNKVAPPFR	QAEFQILYGGKIYRNGE	IIDLGVQQGL	VEKSGAWYAYK	293	
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NTDB id 86721 NGH78 RS06265 WP 109206143.1	...	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 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 1214 NCTC11637 00359 SQJ03206.1	...	347
NTDB id 1211 C694 RS00795 WP 000963128.1	...	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