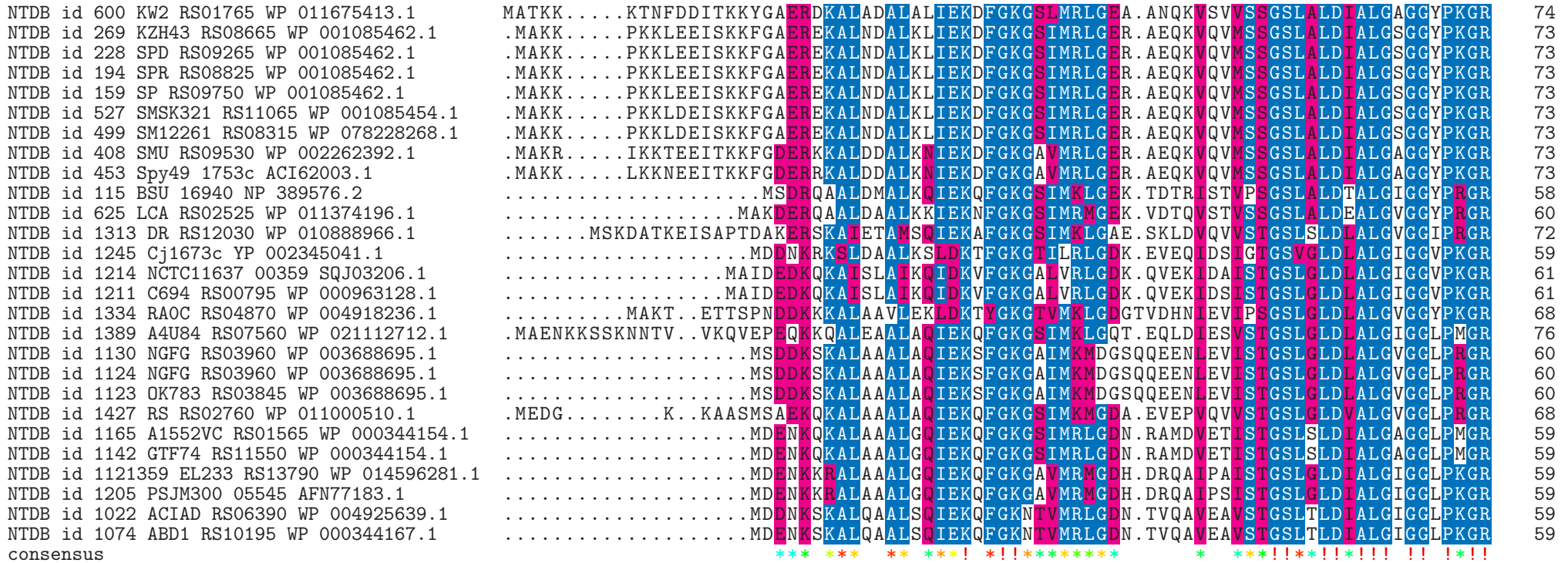


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NTDB id 600 KW2 RS01765 WP 011675413.1	VV	I	D	S	V	A	A	L	V	P	K	A	E	I	D	G	E	I	G	D	S	S	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	A	C	H	I	N	K	T	K	T	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	.	F	G	S	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	233			
NTDB id 269 KZH43 RS08665 WP 001085462.1	V	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	G	A	S	I	N	K	T	K	T	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	.	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	232		
NTDB id 228 SPD RS09265 WP 001085462.1	V	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	G	A	S	I	N	K	T	K	T	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	.	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	232		
NTDB id 194 SPR RS08825 WP 001085462.1	V	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	G	A	S	I	N	K	T	K	T	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	.	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	232		
NTDB id 159 SP RS09750 WP 001085462.1	V	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	G	A	S	I	N	K	T	K	T	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	.	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	232		
NTDB id 527 SMSK321 RS11065 WP 001085454.1	V	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	G	A	S	I	N	K	T	K	T	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	.	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	232		
NTDB id 499 SM12261 RS08315 WP 078228268.1	V	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	G	A	S	I	N	K	T	K	T	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	.	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	A	232		
NTDB id 408 SMU RS09530 WP 002262392.1	V	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	S	A	S	I	N	K	T	K	T	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	.	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	S	232		
NTDB id 453 Spy49 1753c ACI62003.1	V	V	V	D	S	V	A	A	L	V	P	R	A	E	I	D	G	D	I	G	D	S	H	V	G	L	Q	A	R	M	S	Q	A	M	R	K	L	S	A	S	I	N	K	T	K	T	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	.	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	S	232		
NTDB id 115 BSU 16940 NP 389576.2	V	V	V	D	S	V	A	A	L	V	P	K	A	E	I	E	G	D	M	G	D	S	H	V	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	S	G	A	I	N	K	S	K	T	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	.	F	G	N	P	E	T	T	P	G	G	R	A	L	K	F	Y	S	217	
NTDB id 625 LCA RS02525 WP 011374196.1	L	V	V	D	S	V	A	A	L	V	P	R	A	E	I	E	G	D	M	G	D	A	H	V	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	S	G	T	I	N	K	T	K	T	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	.	F	G	N	P	E	V	T	P	G	G	R	A	L	K	F	Y	S	219	
NTDB id 1313 DR RS12030 WP 010888966.1	V	V	V	D	S	V	A	A	L	T	P	R	A	E	I	E	G	D	M	G	D	S	L	P	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	A	I	L	S	K	T	G	T	A	A	I	F	I	N	Q	L	R	E	K	V	G	V	M	.	Y	C	N	P	E	T	T	T	G	G	R	A	L	K	F	Y	A	231
NTDB id 1245 Cj1673c YP 002345041.1	I	V	V	D	S	V	A	A	L	T	P	K	A	E	I	E	G	D	M	G	D	Q	H	V	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	G	I	V	H	K	M	N	T	V	I	F	I	N	Q	L	R	M	K	I	G	A	M	G	Y	C	T	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	219	
NTDB id 1214 NCTC11637 00359 SQJ03206.1	V	V	V	D	S	V	A	A	L	T	P	K	A	E	I	E	G	D	M	G	D	Q	H	V	G	L	Q	A	R	L	M	S	H	A	L	R	K	I	T	G	V	L	H	K	M	N	T	L	I	F	I	N	Q	L	R	M	K	I	G	M	G	Y	C	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	221		
NTDB id 1211 C694 RS00795 WP 000963128.1	V	V	V	D	S	V	A	A	L	T	P	K	A	E	I	E	G	D	M	G	D	Q	H	V	G	L	Q	A	R	L	M	S	H	A	L	R	K	I	T	G	V	L	H	K	M	N	T	L	I	F	I	N	Q	L	R	M	K	I	G	M	G	Y	C	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	221		
NTDB id 1334 RAOC RS04870 WP 004918236.1	V	V	V	D	S	V	A	A	L	T	P	K	A	E	I	E	G	D	M	G	D	S	K	M	G	L	H	A	R	L	M	S	Q	A	L	R	K	L	T	S	S	I	S	K	T	K	C	T	V	I	F	I	N	Q	L	R	D	K	I	G	V	M	.	F	G	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	227
NTDB id 1389 A4U84 RS07560 WP 021112712.1	I	I	V	D	S	V	A	A	L	T	P	K	A	E	I	E	G	D	M	G	D	S	H	M	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	A	N	I	K	N	T	N	C	L	V	V	F	I	N	Q	L	R	M	K	I	G	V	M	.	F	G	N	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	235
NTDB id 1130 NGFG RS03960 WP 003688695.1	V	V	V	D	S	V	A	A	L	V	P	K	A	E	I	E	G	D	M	G	D	S	H	V	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	G	H	I	K	K	T	N	T	L	V	V	F	I	N	Q	L	R	M	K	I	G	V	M	.	F	G	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	S	219
NTDB id 1124 NGFG RS03960 WP 003688695.1	V	V	V	D	S	V	A	A	L	V	P	K	A	E	I	E	G	D	M	G	D	S	H	V	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	G	H	I	K	K	T	N	T	L	V	V	F	I	N	Q	L	R	M	K	I	G	V	M	.	F	G	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	S	219
NTDB id 1123 OK783 RS03845 WP 003688695.1	V	V	V	D	S	V	A	A	L	V	P	K	A	E	I	E	G	D	M	G	D	S	H	V	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	G	H	I	K	K	T	N	T	L	V	V	F	I	N	Q	L	R	M	K	I	G	V	M	.	F	G	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	S	219
NTDB id 1427 RS RS02760 WP 011000510.1	I	V	I	D	S	V	A	A	L	V	P	K	A	E	I	E	G	D	M	G	D	A	L	P	G	L	Q	A	R	L	M	S	Q	A	L	R	K	L	T	G	T	I	K	R	T	N	C	L	V	I	F	I	N	Q	L	R	M	K	I	G	V	M	.	F	G	S	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	227
NTDB id 1165 A1552VC RS01565 WP 000344154.1	I	V	V	D	S	V	A	A	L	T	P	K	A	E	I	E	G	D	M	G	D	S	H	M	G	L	Q	A	R	L	M	S	Q	A	M	R	K	L	T	G	N	L	K	Q	S	N	C	M	C	I	F	I	N	Q	L	R	M	K	I	G	V	M	.	F	G	N	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	218
NTDB id 1142 GTF74 RS11550 WP 000344154.1	I	V	V	D	S	V	A	A	L	T	P	K	A	E	I	E	G	D	M	G	D	S	H	M	G	L	Q	A	R	L	M	S	Q	A	M	R	K	L	T	G	N	L	K	Q	S	N	C	M	C	I	F	I	N	Q	L	R	M	K	I	G	V	M	.	F	G	N	P	E	T	T	T	G	G	N	A	L	K	F	Y	A	218
NTDB id 1121359 EL233 RS13790 WP 014596281.1	I	I	V	D	S	V	A																																																																										






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NTDB id 600 KW2 RS01765 WP 011675413.1	DEKIGQQA	EKAKNYL	KEHQDV	FDEID	HKVRAAH	CLDDSEVAETE	EEET...TASKTKAKAKKEEKAVETEEIELELED..	387		
NTDB id 269 KZH43 RS08665 WP 001085462.1	DEKIGQGS	ENAKKYL	AEHPEIF	DEIDKQV	RSKFC	LIDGEEVSE	QDTE...KKDE...PKKEEA..VNEEVPLDLGDEL	382		
NTDB id 228 SPD RS09265 WP 001085462.1	DEKIGQGS	ENAKKYL	AEHPEIF	DEIDKQV	RSKFC	LIDGEEVSE	QDTE...KKDE...PKKEEA..VNEEVPLDLGDEL	382		
NTDB id 194 SPR RS08825 WP 001085462.1	DEKIGQGS	ENAKKYL	AEHPEIF	DEIDKQV	RSKFC	LIDGEEVSE	QDTE...KKDE...PKKEEA..VNEEVPLDLGDEL	382		
NTDB id 159 SP RS09750 WP 001085462.1	DEKIGQGS	ENAKKYL	AEHPEIF	DEIDKQV	RSKFC	LIDGEEVSE	QDTE...KKDE...PKKEEA..VNEEVPLDLGDEL	382		
NTDB id 527 SMSK321 RS11065 WP 001085454.1	DEKIGQGS	ENAKKYL	ADNPEV	FAEID	HQVRVQF	CLIDGEEAAE	...S...KKDE...VAQVDS..VNEEVTLDLGDEL	378		
NTDB id 499 SM12261 RS08315 WP 078228268.1	DEKIGQGS	ENAKKYL	ADNPEIF	DEIDHQR	VRVQF	CLIDGEEIAE	...S...KKDE...AAQVDS..VNEEVTLDLGD	378		
NTDB id 408 SMU RS09530 WP 002262392.1	GEKIGQGS	ENAKKFL	ADNPEIF	DDIDHQR	VRVQY	CLIEEDNTEEK	QSSK...EK...ETDEK..ADKNLVLELDDTI	379		
NTDB id 453 Spy49 1753c ACI62003.1	GEKIGQGS	ENAKRYL	ADHPQI	FDEID	RKVRVKF	CLLEESEEE	SAMAVA...SE...E...TDDLALDLNGI	374		
NTDB id 115 BSU 16940 NP 389576.2	EERLGG	RENAKQ	FLKENK	DIIMLM	IQQEIR	EHYCD	DNNGVVQQQAEET...QEEL.EFE.E.....	348		
NTDB id 625 LCA RS02525 WP 011374196.1	SERIGQG	RENAKNY	LADHED	VEDEV	RLKVR	AAAYC	ISDVPEEDLPTTED...E.QI.NILPDDST...EE.....	355		
NTDB id 1313 DR RS12030 WP 010888966.1	DERIGQC	KEKTIAY	IAERP	MEQE	IRDRV	MAAIRAGN	AGEAPALAPAPAAPEAAEA.....	363		
NTDB id 1245 Cj1673c YP 002345041.1	DKKLGQ	GRENSK	AFLEN	PEIA	DEITKAT	QNSMC	IEGMISGSE..DDEG..EE.....	343		
NTDB id 1214 NCTC11637 00359 SQJ03206.1	DKKLGQ	GRENAK	ALLKED	KALADE	ITLKIT	KESIC	SNEEIMPLP..DEPL..EEM.....	347		
NTDB id 1211 C694 RS00795 WP 000963128.1	DKKLGQ	GRENAK	ALLKED	KALADE	ITLKIT	KESIC	SNEEIMPLP..DEPL..EEM.....	347		
NTDB id 1334 RAOC RS04870 WP 004918236.1	DTKLGQ	GRDITV	KELIK	DNPEI	AEELE	AKIRE	KLQAK.....	343		
NTDB id 1389 A4U84 RS07560 WP 021112712.1	GTKIGQC	KNNAVK	VLKEN	PEIAD	KLQET	RNTLA	SNPNSVLKA..TASDSNDESVEEFSE.....EEL.....	372		
NTDB id 1130 NGFG RS03960 WP 003688695.1	GAKIGQG	KDNV	RVWLKEN	PEIS	DEIDAKI	RALNC	VEMHI..TE..GT...QDET	DGERPE.....E.....	348	
NTDB id 1124 NGFG RS03960 WP 003688695.1	GAKIGQG	KDNV	RVWLKEN	PEIS	DEIDAKI	RALNC	VEMHI..TE..GT...QDET	DGERPE.....E.....	348	
NTDB id 1123 OK783 RS03845 WP 003688695.1	GAKIGQC	KDNV	RVWLKEN	PEIS	DEIDAKI	RALNC	VEMHI..TE..GT...QDET	DGERPE.....E.....	348	
NTDB id 1427 RS RS02760 WP 011000510.1	GERIGQ	GRDNC	REFLR	ENAE	LAREI	ENKVR	EHLGVTPMGAVTL..A...EEV	EED.....	352	
NTDB id 1165 A1552VC RS01565 WP 000344154.1	GDKIGQC	KANACK	YLKEN	PEIA	KTLD	KKLRE	MLLNPENMQLIA..ETSSAADDV	EFGAVPE.....EF.....	354	
NTDB id 1142 GTF74 RS11550 WP 000344154.1	GDKIGQC	KANACK	YLKEN	PEIA	KTLD	KKLRE	MLLNPENMQLIA..ETSSAADDV	EFGAVPE.....EF.....	354	
NTDB id 1121359 EL233 RS13790 WP 014596281.1	GNKIGQG	KANA	AKFLED	NPEI	GREIE	QQIRD	KLLVSGGSSKA..NVVSE	DLVDADL.....	348	
NTDB id 1205 PSJM300 05545 AFN77183.1	GSKIGQC	KANA	AKYLE	ENPEI	GGEIE	QQIR	AKLLVTSAN.TKA..TPVAE	DLADADI.....	347	
NTDB id 1022 ACIAD RS06390 WP 004925639.1	GNKIGQG	KNNVIR	YLEEN	PEI	ISTE	IEAVI	REQLLTKASDQTA...HDE	TEEPDLLES.....	349	
NTDB id 1074 ABD1 RS10195 WP 000344167.1	GNKIGQC	KNNVIR	YFENN	QIAE	IEIERN	I	REQLLTTGTNGAVQ...I.E	DEEPDLLLE.....S.....	349	
consensus	**!!!	*****	**	*****	*****	**	**	*		

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	E	I	E	L	E	E	
NTDB id 600 KW2 RS01765 WP 011675413.1	.	.	.	.	.	.	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	E	I	E	I	E	E	388
NTDB id 228 SPD RS09265 WP 001085462.1	E	I	E	I	E	E	388
NTDB id 194 SPR RS08825 WP 001085462.1	E	I	E	I	E	E	388
NTDB id 159 SP RS09750 WP 001085462.1	E	I	E	I	E	E	388
NTDB id 527 SMSK321 RS11065 WP 001085454.1	E	I	E	I	E	E	384
NTDB id 499 SM12261 RS08315 WP 078228268.1	E	I	E	I	E	E	384
NTDB id 408 SMU RS09530 WP 002262392.1	E	L	E	D	.	.	383
NTDB id 453 Spy49 1753c ACI62003.1	E	I	E	D	.	.	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 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 1121359 EL233 RS13790 WP 014596281.1	.	.	.	.	.	.	348
NTDB id 1205 PSJM300 05545 AFN77183.1	.	.	.	.	.	.	347
NTDB id 1022 ACIAD RS06390 WP 004925639.1	.	.	.	.	.	.	349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	.	.	.	.	.	.	349
consensus							

 non conserved  
 similar  
 ≥ 50% conserved