

NTDB	id	600	KW2	RS01765	WP	011675413.1	MATK	...	KKTNFDDITKKYGA	ERD	KAL	ADAL	AL	IEKD	FGKGS	LMRLGE	AANQ	.K	VSV	VSSGSL	ALDI	IALG	AGGY	PKGRI	75
NTDB	id	269	KZH43	RS08665	WP	001085462.1	.MAK	...	KPKKLEEISKKFGA	ERE	KAL	NDAL	KL	IEKD	FGKGS	SIMRLGE	RAEQ	.KVQVMSSGSL	ALDI	IALG	SGGY	PKGRI	74		
NTDB	id	228	SPD	RS09265	WP	001085462.1	.MAK	...	KPKKLEEISKKFGA	ERE	KAL	NDAL	KL	IEKD	FGKGS	SIMRLGE	RAEQ	.KVQVMSSGSL	ALDI	IALG	SGGY	PKGRI	74		
NTDB	id	194	SPR	RS08825	WP	001085462.1	.MAK	...	KPKKLEEISKKFGA	ERE	KAL	NDAL	KL	IEKD	FGKGS	SIMRLGE	RAEQ	.KVQVMSSGSL	ALDI	IALG	SGGY	PKGRI	74		
NTDB	id	159	SP	RS09750	WP	001085462.1	.MAK	...	KPKKLEEISKKFGA	ERE	KAL	NDAL	KL	IEKD	FGKGS	SIMRLGE	RAEQ	.KVQVMSSGSL	ALDI	IALG	SGGY	PKGRI	74		
NTDB	id	527	SMSK321	RS11065	WP	001085454.1	.MAK	...	KPKKLDEISKKFGA	ERE	KAL	NDAL	KL	IEKD	FGKGS	SIMRLGE	RAEQ	.KVQVMSSGSL	ALDI	IALG	SGGY	PKGRI	74		
NTDB	id	499	SM12261	RS08315	WP	078228268.1	.MAK	...	KPKKLDEISKKFGA	ERE	KAL	NDAL	KL	IEKD	FGKGS	SIMRLGE	RAEQ	.KVQVMSSGSL	ALDI	IALG	SGGY	PKGRI	74		
NTDB	id	453	Spy49	1753c	ACI62003.1		.MAK	...	KLKKNEEITKKFGD	ERR	KAL	DDAL	KN	IEKD	FGKGA	VIMRLGE	RAEQ	.KVQVMSSGSL	ALDI	IALG	AGGY	PKGRI	74		
NTDB	id	408	SMU	RS09530	WP	002262392.1	.MAK	...	RIKKTEEITKKFGD	ERR	KAL	DDAL	KN	IEKD	FGKGA	VIMRLGE	RAEQ	.KVQVMSSGSL	ALDI	IALG	AGGY	PKGRI	74		
NTDB	id	115	BSU	16940	NP	389576.2		MSD	DRQAAL	DMAL	KQ	IEK	Q	FGKGS	IMKLGE	KTD	R	IST	VS	SGSL	ALD	TALG	IGGY	PRGRI	59
NTDB	id	625	LCA	RS02525	WP	011374196.1	.....	MAKD	ERQAAL	DAAL	KK	IEKN	FGKGS	IMRMGE	KVDT	.Q	VST	VSSGSL	ALDE	ALGV	GGY	PRGRI	61		
NTDB	id	1313	DR	RS12030	WP	010888966.1		MSKDAT	KEISAPTDAK	ERS	KA	TETAM	SQ	IEKA	FGKGS	IMKLGA	ESKL	.D	VQV	VSTGSL	SLDL	ALGV	GGI	PRGRI	73
NTDB	id	1245	Cj1673c	YP	002345041.1			MDDN	KRKS	SLDA	ALKS	LD	KT	FGKGT	ILRL	GD	KEVE	.Q	IDS	IGTGS	VGLD	LALG	IGGV	PKGRI	60
NTDB	id	1214	NCTC11637	00359	SQJ03206.1			MAIDED	KQKAT	ISLA	TKQ	ID	KV	FGKGA	LVRL	GD	KQVE	.K	IDA	ISTGSL	GLDL	LALG	IGGV	PKGRI	62
NTDB	id	1211	C694	RS00795	WP	000963128.1		MAIDED	KQKAT	ISLA	TKQ	ID	KV	FGKGA	LVRL	GD	KQVE	.K	IDS	ISTGSL	GLDL	LALG	IGGV	PKGRI	62
NTDB	id	1334	RAOC	RS04870	WP	004918236.1		MAKT	.ETTSPND	KKKALA	AVLEK	LD	KT	YVGK	TVMKL	GD	GTVDHN	.IEV	IPS	SGSL	GLDL	LALGV	GGY	PKGRI	69
NTDB	id	1389	A4U84	RS07560	WP	021112712.1	MAEN	KKSSKNNTV	.VKQVEP	EQKK	QALEA	ALA	Q	IEKQ	FGKGS	IMKLGQ	TEQL	.D	IES	VSTGSL	GLDL	LALG	IGGL	PMGRI	77
NTDB	id	1130	NGFG	RS03960	WP	003688695.1	.....	MSD	DKSKAL	AAALA	Q	IEKS	FGKGA	IMKMDGS	QQEEN	.L	EV	ISTGSL	GLDL	LALGV	GGL	PRGRI	61		
NTDB	id	1124	NGFG	RS03960	WP	003688695.1	.....	MSD	DKSKAL	AAALA	Q	IEKS	FGKGA	IMKMDGS	QQEEN	.L	EV	ISTGSL	GLDL	LALGV	GGL	PRGRI	61		
NTDB	id	1123	OK783	RS03845	WP	003688695.1	.....	MSD	DKSKAL	AAALA	Q	IEKS	FGKGA	IMKMDGS	QQEEN	.L	EV	ISTGSL	GLDL	LALGV	GGL	PRGRI	61		
NTDB	id	271331	C4H09	RS06665	WP	003812760.1	.MDD		K..TSKAAAA	EK	KAL	AAAL	Q	IEKQ	FGKGS	IMRYGD	NEVEHD	.IQV	VSTGSL	GLDL	IALGV	GGL			

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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 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
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NTDB id 271331 C4H09 RS06665 WP 003812760.1
NTDB id 1427 RS RS02760 WP 011000510.1
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NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

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NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
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consensus

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logo

NTDB id 600 KW2 RS01765 WP 011675413.1	VR	L	D	V	R	G	S	T	K	I	E	E	G	S	.	G	D	N	K	T	Q	I	G	K	I	T	K	I	K	V	V	K	N	K	V	A	P	P	F	K	V	A	L	V	D	I	M	F	G	E	G	I	S	T	G	E	L	I	N	I	A	V	E	E	G	I	I	K	K	S	G	A	W	F	A	Y	N	D	313								
NTDB id 269 KZH43 RS08665 WP 001085462.1	VR	L	D	V	R	G	N	T	Q	I	K	G	T	G	.	D	Q	K	E	T	N	V	G	K	E	T	K	I	K	V	V	K	N	K	V	A	P	P	F	K	E	A	V	V	E	I	M	Y	G	E	G	I	S	K	T	G	E	L	L	K	I	A	S	D	L	D	I	I	K	K	A	G	A	W	Y	S	Y	K	D	312							
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NTDB id 159 SP RS09750 WP 001085462.1	VR	L	D	V	R	G	N	T	Q	I	K	G	T	G	.	D	Q	K	E	T	N	V	G	K	E	T	K	I	K	V	V	K	N	K	V	A	P	P	F	K	E	A	V	V	E	I	M	Y	G	E	G	I	S	K	T	G	E	L	L	K	I	A	S	D	L	D	I	I	K	K	A	G	A	W	Y	S	Y	K	D	312							
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NTDB id 453 Spy49 1753c ACI62003.1	VR	L	D	V	R	G	T	T	Q	I	K	G	T	G	.	D	Q	K	D	S	S	I	G	K	E	T	K	I	K	V	V	K	N	K	V	A	P	P	F	K	V	A	E	V	E	I	M	Y	G	E	G	I	S	R	T	G	E	L	V	K	I	A	S	D	L	D	I	I	Q	K	A	G	A	W	F	S	Y	N	G	312							
NTDB id 408 SMU RS09530 WP 002262392.1	VR	L	D	V	R	G	N	T	Q	I	K	G	T	G	.	E	Q	K	D	S	N	I	G	K	E	T	K	I	K	V	V	K	N	K	V	A	P	P	F	K	E	A	F	V	E	I	I	Y	G	E	G	I	S	R	T	G	E	L	V	K	I	A	S	D	L	G	I	I	Q	K	A	G	A	W	Y	S	Y	N	G	312							
NTDB id 115 BSU 16940 NP 389576.2	VR	L	E	V	R	R	A	E	Q	L	K	Q	G	N	.	.	.	.	.	.	D	M	G	N	K	T	K	I	K	V	V	K	N	K	V	A	P	P	F	R	T	A	E	V	D	I	M	Y	G	E	G	I	S	K	E	G	E	I	I	D	L	G	T	E	L	D	I	V	Q	K	S	G	S	W	Y	S	Y	E	E	293							
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NTDB id 1313 DR RS12030 WP 010888966.1	VR	L	D	V	R	K	I	G	Q	.	.	.	.	.	.	.	.	.	.	P	T	K	V	G	N	D	A	V	A	N	T	V	K	I	K	T	V	K	N	K	V	A	A	P	F	K	E	V	E	L	A	L	V	Y	G	K	G	F	D	Q	L	S	D	L	V	L	G	A	A	D	M	D	I	I	K	K	A	G	S	F	Y	S	Y	G	D	308	
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NTDB id 1211 C694 RS00795 WP 000963128.1	VR	I	D	I	R	R	I	A	S	.	.	.	.	.	.	.	.	.	.	L	.	K	Q	N	.	E	Q	H	I	G	N	R	A	K	A	K	V	V	K	N	K	V	A	P	P	F	R	E	A	E	F	D	I	M	F	G	E	G	I	S	K	E	G	E	I	I	D	Y	G	V	K	L	D	I	V	D	K	S	G	A	W	L	S	Y	Q	D	297
NTDB id 1334 RAOC RS04870 WP 004918236.1	VR	I	D	I	R	R	S	L	S	D	T	G	K	I	K	D	K	S	G	E	V	I	G	N	R	T	K	V	K	V	V	K	N	K	V	A	P	P	F	K	S	A	E	F	D	I	M	Y	G	E	G	V	S	K	V	G	E	I	L	D	V	A	T	D	L	D	I	I	Q	K	S	G	S	W	F	S	Y	Q	D	308							
NTDB id 1389 A4U84 RS07560 WP 021112712.1	VR	L	D	I	R	R	C	G	V	.	.	.	.	.	.	.	.	.	.	V	.	K	D	G	.	D	E	I	I	G	S	E	T	K	V	K	V	V	K	N	K	V	A	P	P	F	R	E	V	Q	F	D	I	M	Y	G	E	G	I	S	R	M	N	E	L	L	I	L	A	E	A	N	G	F	I	K	K	S	G	A	W	F	S	Y	D	G	311
NTDB id 1130 NGFG RS03960 WP 003688695.1	VR	L	D	I	R	R	T	G	S	.	.	.	.	.	.	.	.	.	.	I	.	K	K	G	.	E	E	V	L	G	N	E	T	R	V	K	V	I	K	N	K	V	A	P	P	F	R	Q	A	E	F	D	I	L	Y	G	E	G	I	S	W	E	G	E	L	I	D	I	G	V	K	N	D	I	I	N	K	S	G	A	W	Y	S	Y	N	G	295
NTDB id 1124 NGFG RS03960 WP 003688695.1	VR	L	D	I	R	R	T	G	S	.	.	.	.	.	.	.	.	.	.	I	.	K	K	G	.	E	E	V	L	G	N	E	T	R	V	K	V	I	K	N	K	V	A	P	P	F	R	Q	A	E	F	D	I	L	Y	G	E	G	I	S	W	E	G	E	L	I	D	I	G	V	K	N	D	I	I	N	K	S	G	A	W	Y	S	Y	N	G	295
NTDB id 1123 OK783 RS03845 WP 003688695.1	VR	L	D	I	R	R	T	G	S	.	.	.	.	.	.	.	.	.	.	I	.	K	K	G	.	E	E	V	L	G	N	E	T	R	V	K	V	I	K	N	K	V	A	P	P	F	R	Q	A	E	F	D	I	L	Y	G	E	G	I	S	W	E	G	E	L	I	D	I	G	V	K	N	D	I	I	N	K	S	G	A	W	Y	S	Y	N	G	295
NTDB id 271331 C4H09 RS06665 WP 003812760.1	VR	L	D	I	R	R	I	G	A	.	.	.	.	.	.	.	.	.	.	I	.	K	K	G	.	D	E	V	V	G	N	E	T	R	V	K	V	V	K	N	K	V	A	P	P	F	K	Q	A	E	F	D	I	M	Y	G	S	G	I	S	R	E	G	E	I	I	D	L	G	V	Q	A	N	V	V	D	K	S	G	A	W	Y	S	Y	S	G	303
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NTDB id 1165 A1552VC RS01565 WP 000344154.1	VR	L	D	I	R	R	T	G	A	.	.	.	.	.	.	.	.	.	.	I	.	K	E	G	.	E	E	V	V	G	N	E	T	R	I	K	V	V	K	N	K	I	A	A	P	F	K	E	A	N	T	Q	I	M	Y	G	Q	G	F	N	R	E	G	E	L	I	D	L	G	V	K	H	K	M	V	E	K	S	G	A	W	Y	S	Y	N	G	294
NTDB id 1142 GTF74 RS11550 WP 000344154.1	VR	L	D	I	R	R	T	G	A	.	.	.	.	.	.	.	.	.	.	I	.	K	E	G	.	E	E	V	V	G	N	E	T	R	I	K	V	V	K	N	K	I	A	A	P	F	K	E	A	N	T	Q	I	M	Y	G	Q	G	F	N	R	E	G	E	L	I	D	L	G	V	K	H	K	M	V	E	K	S	G	A	W	Y	S	Y	N	G	294
NTDB id 1205 PSJM300 05545 AFN77183.1	VR	L	D	I	R	R	T	G	A	.	.	.	.	.	.	.	.	.	.	V	.	K	E	G	.	D	E	V	V	G	S	E	T	R	V	K	V	V	K	N	K	V	A	P	P	F	R	Q	A	E	F	Q	I	L	Y	G	K	G	I	Y	R	N	G	E	I	I	D	L	G	V	Q	Q	L	V	E	K	S	G	A	W	Y	A	Y	K	G	294	
NTDB id 1022 ACIAD RS06390 WP 004925639.1	VR	L	D	I	R	R	I	G	Q	.	.	.	.	.	.	.	.	.	.	V	.	K	E	G	.	D	E	I	I	G	S	E	T	K	V	K	V	V	K	N	K	M	A	P	P	F	R	E	A	I	F	Q	I	L	Y	G	K	G	V	N	Q	L	G	E	L	V	D	L	A	V	Q	Q	N	I	V	Q	K	A	G	A	W	Y	S	Y	Q	G	294
NTDB id 1074 ABD1 RS10195 WP 000344167.1	VR	L	D	I	R	R	I	G	Q	.	.	.	.	.	.	.	.	.	.	V	.	K	E	G	.	D	E	I	I	V	G	S	E	T	K	V	K	V	V	K	N	K	M	A	P	P	F	K	E	A	I	F	Q	I	L	Y	G	K	G	T	N	Q	L	G	E	L	V	D	L	A	V	Q															

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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
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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 271331 C4H09 RS06665 WP 0003812760.1
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 1205 PSJM300 05545 AFN77183.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

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Sequence	Score
EKIGQGAEKAKNYLKEHQDVFDEIDHKVRAAHGLDDSEVAE..TEEETASKTKAKAKKEEKAVETEEIELELED...	387
EKIGQGSENAKKYLAEHPEIFDEIDKQVRSKFGLDIGEEVSE..QDTENKKDE...PKKEEA..VNEEVPLDLGDELEI	384
EKIGQGSENAKKYLAEHPEIFDEIDKQVRSKFGLDIGEEVSE..QDTENKKDE...PKKEEA..VNEEVPLDLGDELEI	384
EKIGQGSENAKKYLAEHPEIFDEIDKQVRSKFGLDIGEEVSE..QDTENKKDE...PKKEEA..VNEEVPLDLGDELEI	384
EKIGQGSENAKKYLAHNPEVFAEIDHQVRVQFGLDIGEEAAE.....SKKDE...VAQVDS..VNEEVPLDLGDELEI	380
EKIGQGSENAKKYLAHNPEIFDEIDHQVRVQFGLDIGEEIAE.....SKKDE...AAQVDS..VNEEVPLDLGDELEI	380
EKIGQGSENAKKRYLAHPQIFDEIDRKVRVKFGLLEESEES...AMAVASE.....E.....TDDLALDLNGIEI	376
EKIGQGSENAKKFLADNPEIFDDIDHKVRVQYGLIEEDNTEE..KQSSKEK.....ETDEK..ADKNLVLEDDTIEL	381
ERLGGGRENAKQFLKENKDIMLMIQEQIREHYGLDNGGVVQQ..QAEETQEEL.EFE.E.....	348
ERIGGGRENAKNYLACHEDVEDEVRLKVRAAYGTSVPEEDL..PTTEDE.QI.NILPDDST.....EE.....	355
ERIGGGKEKTIAYTAERPMEQEIRDRVMAATRAGNAGEAPALAPAPAAPEAA.EA.....	363
KKLGGGRENSKAEFLKENPEIADEITKAIQNSMGIEGMIS..GSE....DDEGE.E.....	343
KKLGGGRENAKALLKEDKALADEITLKIKESIGSNEEIM..PLP....DEPLE.EME.....	347
KKLGGGRENAKALLKEDKALADEITLKIKESIGSNEEIM..PLP....DEPLE.EME.....	347
TKLGGGRDRTVKELIKDNPELAELEAKIREKLQAK.....	343
TKIGQGKNNAVKWLKENPEIAKLEQEIRNTLASNPNSV..LKATASDSNDES.DVEEF.....SEEL.....	372
AKIGGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHIT..E.....GTQDE.TDGER.....PEE.....	348
AKIGGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHIT..E.....GTQDE.TDGER.....PEE.....	348
AKIGGGKDNVRVWLKENPEISDEIDAKIRALNGVEMHIT..E.....GTQDE.TDGER.....PEE.....	348
NRIGGGKDNVREYLKEHKEMAEIENKVRENQGIVSRAA..T.FPASEAEDGE.....	353
ERIGGGKDNCREFLRENAELAREIENKVREHLGVTPMGA..V.TLAEVEED.....	352
DKIGGGKANACKYILKENPEIAKTLDDKKIREMLLNPNMQ..LIAETSSAADV.EFGAV.....PEEF.....	354
DKIGGGKANACKYILKENPEIAKTLDDKKIREMLLNPNMQ..LIAETSSAADV.EFGAV.....PEEF.....	354
SKIGGGKANAAKYLEENPEIGQEIEQQIRAKLLVTSANT..KATPVAEDLADA.DI.....	347
NKIGGGKNNVIRVYLEENPQISTEIEAVIREQLLTASDQ..TAA.HDETEEEP.DLL.....ES.....	349
NKIGGGKNNVIRVFEENNQIAEIERNIREQLLTGTNG..AVQ.I.EDEEEP.DLL.....LES.....	349

logo

NTDB id 600 KW2 RS01765 WP 011675413.1	....	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	EIEE	388
NTDB id 228 SPD RS09265 WP 001085462.1	EIEE	388
NTDB id 194 SPR RS08825 WP 001085462.1	EIEE	388
NTDB id 159 SP RS09750 WP 001085462.1	EIEE	388
NTDB id 527 SMSK321 RS11065 WP 001085454.1	EIEE	384
NTDB id 499 SM12261 RS08315 WP 078228268.1	EIEE	384
NTDB id 453 Spy49 1753c ACI62003.1	ED..	378
NTDB id 408 SMU RS09530 WP 002262392.1	ED..	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 271331 C4H09 RS06665 WP 003812760.1	....	353
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
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NTDB id 1022 ACIAD RS06390 WP 004925639.1		349
NTDB id 1074 ABD1 RS10195 WP 000344167.1		349

consensus

 non conserved
 similar
 ≥ 50% conserved