

**S2\_Table. Details of the amino acid sequences used for the phylogenetic analysis.**

<b>Specie name</b>	<b>abbreviation</b>	<b>Accession number</b>	<b>Notes</b>
<b>Bacteria</b>			
<i>Fibrobacter succinogenes</i> subsp. <i>succinogenes</i> S85	FSU1	ACX74338.1	Fibroacteres
<i>Flammeovirga</i> sp. MY04	FLA1	ANQ49303.1	Bacteroidetes
<i>Flammeovirga</i> sp. MY04	FLA2	ANQ52741.1	Bacteroidetes
<i>Flammeovirga yaeyamensis</i>	FYA1	ACA05117.2	Bacteroidetes
<i>Melioribacter roseus</i> P3M-2	MRO1	AFN74927.1	Ignavibacteriae
<i>Saccharophagus degradans</i> 2-40	SDE1	ABD81545.1	Proteobacteria (gamma)
<i>Spirochaeta thermophila</i> DSM 6192	STH1	ADN01068.1	Spirochaetes
<i>Spirochaeta thermophila</i> DSM 6578	STH2	AEJ60366.1	Spirochaetes
Uncultured bacterium	UBA1	AEV59732.1	
<i>Vibrio natriegens</i>	VNA1	ANQ24656.1	Proteobacteria (gamma)
<b>Insects</b>			
<i>Gastrophysa viridula</i>	GV11	ADU33333.1	Arthropoda (Coleoptera)
<i>Callosobruchus maculatus</i>	CMA1	ADU33271.1	Arthropoda (Coleoptera)
<i>Callosobruchus maculatus</i>	CMA2	ADU33272.1	Arthropoda (Coleoptera)
<i>Callosobruchus maculatus</i>	CMA3	ADU33273.1	Arthropoda (Coleoptera)
<i>Callosobruchus maculatus</i>	CMA4	ADU33274.1	Arthropoda (Coleoptera)
<i>Tricholepidion gertschi</i>	TGE1	GASO02036642	Arthropoda (Zygentoma)
<i>Tricholepidion gertschi</i>	TGE2	GASO02042472	Arthropoda (Zygentoma)
<i>Thermobia domestica</i>	TDO1	GASN02045897	Arthropoda (Zygentoma)
<i>Thermobia domestica</i>	TDO2	GASN02045380	Arthropoda (Zygentoma)
<i>Machilis hrabei</i>	MHR1	GAUM02040243	Arthropoda (Archaeognatha)
<i>Eurylophella</i> sp. AD-2013	EUR1	GAZG02013172	Arthropoda (Ephemeroptera)
<i>Isonychia bicolor</i>	IB11	GAXA02038640	Arthropoda (Ephemeroptera)
<b>Collembola</b>			
<i>Cryptopygus antarcticus</i>	CAN1	ABV68808.1	Arthropoda
<i>Orchesella cincta</i> OC12957	OCI1	GAMM01012947	Arthropoda
<i>Sminthurus viridis</i>	SV11	GATZ02024785	Arthropoda
<i>Folsomia candida</i>	FCA1	GASX02002882	Arthropoda
<i>Pogonognathellus</i> sp. AD-2013	POG1	GATD02008031	Arthropoda
<i>Tetradontophora bielaniensis</i>	TBI1	GAXI02022226	Arthropoda
<b>Crustacea</b>			
<i>Limnoria quadripunctata</i>	LQU1	ADE58567.1	Arthropoda
<i>Limnoria quadripunctata</i>	LQU2	ADE58568.1	Arthropoda
<i>Limnoria quadripunctata</i>	LQU3	ADE58569.1	Arthropoda
<i>Hyalella azteca</i>	HAZ1	XP_018022370.1	Arthropoda
<i>Daphnia pulex</i>	DPU1	EFX71596.1	Arthropoda
<i>Daphnia pulex</i>	DPU2	EFX71597.1	Arthropoda
<i>Proasellus grafi</i>	PGR1	HAEX01030896	Arthropoda
<i>Talitrus saltator</i>	TSA1	GDUJ01040948	Arthropoda
<i>Cherax quadricarinatus</i>	CQU1	HACK01027957	Arthropoda
<b>Chelicerata</b>			
<i>Nothrus palustris</i>	NPA1	GEYJ01076133	Arthropoda
<i>Nothrus palustris</i>	NPA2	GEYJ01112851	Arthropoda
<i>Nothrus palustris</i>	NPA3	GEYJ01073735	Arthropoda
<i>Platynothrus peltifer</i>	PPE1	GEYZ01027687	Arthropoda
<i>Platynothrus peltifer</i>	PPE2	GEYZ01016327	Arthropoda
<i>Platynothrus peltifer</i>	PPE3	GEYZ01010130	Arthropoda
<i>Steganacarus magnus</i>	SMA1	GEYQ01012964	Arthropoda
<i>Steganacarus magnus</i>	SMA2	GEYQ01047325	Arthropoda
<b>Gastropoda</b>			
<i>Aplysia kurodai</i>	AKU1	BAJ60954.1	Mollusca
<i>Biomphalaria glabrata</i>	BGL1	AAV91523.1	Mollusca
<i>Haliotis discus discus</i>	HDI1	ACJ12612.1	Mollusca
<i>Haliotis discus discus</i>	HDI2	ACJ12613.1	Mollusca
<i>Haliotis discus hamai</i>	HDI3	BAE78456.1	Mollusca
<i>Limacina antarctica</i>	LAN1	GDRM01030628	Mollusca
<i>Elysia timida</i>	ET11	GBRM01102742	Mollusca
<i>Deroceras reticulatum</i>	DRE1	JW037389	Mollusca
<i>Pomacea canaliculata</i>	PCA1	GBZZ01045211	Mollusca

**Bivalvia***Mytilus edulis**Scapharca broughtonii**Crassostrea gigas**Villosa lienosa*

MED1

SBR1

CG11

VLI1

CAC81056.1

GEXI01012405

GECI01038763

JR521835

Mollusca

Mollusca

Mollusca

Mollusca">

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