

Table S1. List of species used in the phylogenetic analysis

Superfamily	Family	Genus	Species	GenBank Number	mt DNA Size (bp)
Astacoidea	Astacidae	<i>Astacus</i>	<i>Astacus astacus</i>	MT862440	15,179
	Cambaridae	<i>Austropotamobius</i>	<i>Austropotamobius torrentium</i>	NC_033504	15,330
			<i>Austropotamobius pallipes</i>	NC_026560	15,679
			<i>Pacifastacus</i>	NC_033509	16,331
		<i>Cambaroides</i>	<i>Cambaroides dauricus</i>	OL542521	15,580
			<i>Cambaroides schrenckii</i> (in present study)	PP497825	15,572
			<i>Cambaroides schrenckii</i> partial genome(Russia isolate)	KX268737	14,895
		<i>Cambarus</i>	<i>Cambaroides japonicus</i>	KX268736	16,257
			<i>Cambaroides similis</i>	JN991196	16,220
			<i>Cambaroides wladivostokiensis</i>	OR353741	16,391
			<i>Cambarus robustus</i>	NC_033507	15,797
		<i>Faxonius</i>	<i>Faxonius propinquus</i>	NC_068681	15,360
			<i>Faxonius virilis</i>	NC_068680	15,859
			<i>Faxonius luteus</i>	KX268739	16,215
			<i>Faxonius punctimanus</i>	KX119150	15,815
			<i>Orconectes sanbornii</i>	NC_029721	15,883
			<i>Orconectes rusticus</i>	NC_029720	15,875
		<i>Procambarus</i>	<i>Orconectes limosus</i>	NC_026561	16,223
			<i>Procambarus acutus</i>	NC_033510	15,747
			<i>Procambarus alleni</i>	NC_028447	15,942
			<i>Procambarus clarkii</i>	OL542520	15,937
			<i>Procambarus dupratzi</i>	NC_070242	15,000

			<i>Procambarus fallax</i>	NC_020021	15,253
Enoplometopidea	Enoplometopidae	<i>Enoplometopus</i>	<i>Enoplometopus debelius</i>	NC_025592	15,641
			<i>Enoplometopus occidentalis</i>	NC_020027	15,111
Nephropoidea	Nephropidae	<i>Homarus</i>	<i>Homarus gammarus</i>	NC_020020	14,316
			<i>Homarus americanus</i>	NC_015607	16,432
		<i>Metanephrops</i>	<i>Metanephrops thomsoni</i>	NC_027608	19,835
		<i>Nephropsis</i>	<i>Nephropsis grandis</i>	NC_073507	15,977
Parastacoidea	Parastacidae	<i>Astacopsis</i>	<i>Astacopsis gouldi</i>	NC_026215	16,678
		<i>Cherax</i>	<i>Cherax holthuisi</i>	NC_026224	15,889
			<i>Cherax glaber</i>	NC_022939	15,806
			<i>Cherax quadricarinatus</i>	NC_022937	15,869
		<i>Engaeus</i>	<i>Engaeus lengana</i>	NC_022847	15,934
		<i>Engaewa</i>	<i>Engaewa subcoerulea</i>	NC_029407	16,001
			<i>Engaewa walpolea</i>	NC_029395	15,984
		<i>Euastacus</i>	<i>Euastacus armatus</i>	NC_026575	15,555
			<i>Euastacus spinifer</i>	NC_026214	15,558
		<i>Geocharax</i>	<i>Geocharax gracilis</i>	NC_023810	15,924
		<i>Gramastacus</i>	<i>Gramastacus insolitus</i>	NC_030531	15,704
		<i>Ombrastacoides</i>	<i>Ombrastacoides huonensis</i>	NC_041154	17,559
		<i>Parastacus</i>	<i>Parastacus brasiliensis</i>	MG551495	16,572
		<i>Tenuibranchiurus</i>	<i>Tenuibranchiurus glypticus</i>	NC_025647	17,342
Grapsoidea	Sesarmidae	<i>Chiromantes</i>	<i>Chiromantes haematocheir</i>	NC_042142	15,899
