

**Supplemental Table S1.** CD68 Sequences used for phylogenetic analysis.

Species Names	Order	Family	Accession Number
<i>Megalobrama amblycephala</i>	Cypriniformes	Cyprinidae	KY798319.1
<i>Danio rerio</i>	Cypriniformes	Cyprinidae	XM_021471872.1
<i>Pimephales promelas</i>	Cypriniformes	Cyprinidae	XM_039659499.1
<i>Carassius auratus</i>	Cypriniformes	Cyprinidae	XM_026216673.1
<i>Cyprinus carpio</i>	Cypriniformes	Cyprinidae	XM_019094400.1
<i>Sinocyclocheilus anshuiensis</i>	Cypriniformes	Cyprinidae	XM_016479579.1
<i>Sinocyclocheilus grahami</i>	Cypriniformes	Cyprinidae	XM_016229627.1
<i>Sinocyclocheilus rhinoceros</i>	Cypriniformes	Cyprinidae	XM_016543127.1
<i>Fundulus heteroclitus</i>	Cyprinodontiformes	Fundulidae	XM_036146112.1
<i>Aphyosemion striatum</i>	Cyprinodontiformes	Aplocheilidae	HADW01006630.1
<i>Nothobranchius furzeri</i>	Cyprinodontiformes	Aplocheilidae	HAEJ01012303.1
<i>Nothobranchius kadleci</i>	Cyprinodontiformes	Aplocheilidae	HADZ01001372.1
<i>Nothobranchius korthausae</i>	Cyprinodontiformes	Aplocheilidae	HAEB01016763.1
<i>Nothobranchius kuhntae</i>	Cyprinodontiformes	Aplocheilidae	HAED01005512.1
<i>Nothobranchius pienaar</i>	Cyprinodontiformes	Aplocheilidae	HAEF01004587.1
<i>Nothobranchius rachovii</i>	Cyprinodontiformes	Aplocheilidae	HAEH01017065.1
<i>Perca flavescens</i>	Perciformes	Percidae	XM_028564140.1
<i>Etheostoma spectabile</i>	Perciformes	Percidae	XM_032544753.1
<i>Sebastes umbrosus</i>	Perciformes	Sebastidae	XM_037758134.1
<i>Oncorhynchus kisutch</i>	Salmoniformes	Salmonidae	XM_020491718.2
<i>Oncorhynchus mykiss</i>	Salmoniformes	Salmonidae	XM_021578316.2
<i>Oncorhynchus nerka</i>	Salmoniformes	Salmonidae	XM_029646163.1
<i>Oncorhynchus tshawytscha</i>	Salmoniformes	Salmonidae	XM_024405126.1
<i>Pygocentrus nattereri</i>	Characiformes	Serrasalminae	XM_017718831.2
<i>Colossoma macropomum</i>	Characiformes	Serrasalminae	XM_036596639.1
<i>Ictalurus punctatus</i>	Siluriformes	Ictaluridae	XM_017472374.1
<i>Tachysurus fulvidraco</i>	Siluriformes	Bagridae	XM_027169456.1
<i>Seriola dumerili</i>	Carangiformes	Carangidae	XM_022747801.1
<i>Monopterus albus</i>	Synbranchiformes	Synbranchidae	XM_020594973.1
<i>Scophthalmus maximus</i>	Pleuronectiformes	Scophthalmidae	XM_035623117.1
<i>Homo sapiens</i>	Primates	Hominidae	NM_001040059.2
<i>Mus musculus</i>	Rodentia	Eumuroidea	NM_001291058.1

**Supplemental Table S2.** Branch-site model A [58].

Site Class	Proportion	Background $\omega$	Foreground $\omega$
0	$p_0$	$0 < \omega_0 < 1$	$0 < \omega_0 < 1$
1	$p_1$	$\omega_1 = 1$	$\omega_1 = 1$
2a	$(1 - p_0 - p_1) p_0 / (p_0 + p_1)$	$0 < \omega_0 < 1$	$\omega_2 \geq 1$
2b	$(1 - p_0 - p_1) p_1 / (p_0 + p_1)$	$\omega_1 = 1$	$\omega_2 \geq 1$