

Supplementary Table S1 Sequences used in this study with GenBank accession Nos. and references

Taxon name	GenBank accession No.	References
<i>Barbatula minxianensis</i>	KX373849	Feng et al., 2017
<i>Claea dabryi</i>	NC029242	Li et al., 2017
<i>Eonemachilus nigromaculatus</i>	MW532081	Du et al., 2021
<i>Homatula berezowskii</i>	MH125163	Li et al., 2020
<i>Lefua costata</i>	DQ105196	Tang et al., 2006
<i>L. echigonia</i>	AB080180	Saka et al., 2003
<i>L. nikkonis</i>	AB100919	Saka et al., 2003
<i>Micronemacheilus cruciatus</i>	AP012142	Luo et al., 2019
<i>Nemacheilus pallidus</i>	GQ174370	Havird et al., 2010
<i>N. ornatus</i>	GQ174363	Havird et al., 2010
<i>Oreonectes guilinensis</i>	MN239094	Huang et al., 2019
<i>O. platycephalus</i>	DQ105197	Tang et al., 2006
<i>Petruichthys brevis</i>	NC031637	Luo et al., 2019
<i>Schistura bucculenta</i>	JB837654	Huang et al., 2019
<i>S. callichromus</i>	JB837652	Sgouros et al., 2019
<i>S. caudofurca</i>	JB837651	Sgouros et al., 2019
<i>S. fasciolata</i>	HM010565	Min et al., 2012
<i>S. latifasciata</i>	JN837653	Min et al., 2012
<i>Triplophysa bleekeri</i>	FJ406605	Sgouros et al., 2019
<i>T. orientalis</i>	DQ105251	Tang et al., 2006
<i>T. rosa</i>	NC019587	Wang et al., 2012
<i>T. stewarti</i>	DQ105248	Tang et al., 2006
<i>T. tenius</i>	KX373841	Huang et al., 2019
<i>T. wuweiensis</i>	KX373838	Huang et al., 2019
<i>Troglonectes daqikongensis</i>	KU987436	Huang et al., 2019
<i>T. furcocaudalis</i>	NC032384	Luo et al., 2017
<i>T. hechiensis</i> sp. nov.	MW495267	This study
<i>T. hechiensis</i> sp. nov.	MW495268	This study
<i>T. hechiensis</i> sp. nov.	MW495269	This study
<i>T. jiarongensis</i>	KU987437	Huang et al., 2019
<i>T. shuilongensis</i>	KF640641	Huang et al., 2019
<i>Yunnanilus jiuchiensis</i>	MW532080	Du et al., 2021
<i>Y. pulcherrimus</i>	MK387705	Luo et al., 2019

REFERENCES

- Du LN, Yang J, Min R, Chen XY, Yang JX. 2021. A review of the Cypriniform tribe Yunnanilini Prokofiev, 2010 from China, with an emphasis on five genera based on morphologies and complete mitochondrial genomes of some species. *Zoological Research*, **42**(3): 310–334.
- Feng CG, Wu YJ, Tian F, Tong C, Tang YT, Zhang RY, Li GG, Zhao K. 2017. Elevational diversity gradients of Tibetan loaches: The relative roles of ecological and evolutionary processes. *Ecology and Evolution*, 2017: 1–8.

- Huang JQ, Yang J, Wu ZQ, Zhao YH. 2019. *Oreonectes guilinensis* (Teleostei, Cypriniformes, Nemacheilidae), a new loach species from Guangxi, China. *Journal of Fish Biology*, **96**: 111–119.
- Li Q, Liu Y, Chen YY, Xiao Y, Du J. 2017. The complete mitochondrial genome of *Claea dabryi* (Teleostei, Nemachilinae, Claeidae). *Mitochondrial DNA Part A*, **28**: 319–321.
- Li Y, Mo HL, Xu J, Wu L, Wang LX. 2020. The complete mitochondrial genome of *Homatula berezowskii* (Cypriniformes, Nemacheilidae, Nemachilinae). *Mitochondrial DNA Part B*, **5**: 3590–3591.
- Luo FG, Huang J, Liu JL, Situ L, Liu X, Wen YH. 2017. Characterization of complete mitochondrial genome of *Oreonectes furcocaudalis* (Cypriniformes, Balitoridae, Nemacheilidae). *Mitochondrial DNA Part B*, **2**(1): 69–70.
- Luo FG, Huang J, Luo T, Yang J, Zhou HJ, Wen YH. 2019. Complete mitochondrial genome and phylogenetic analysis of *Yunnanilus pulcherrimus* (Cypriniformes, Nemacheilidae). *Mitochondrial DNA Part B*, **4**(1): 1269–1270.
- Min R, Chen XY, Yang JX, Winterbottom R, Mayden RL. 2012. Phylogenetic relationships of the genus *Homatula* (Cypriniformens: Nemacheilidae), with special reference to the biogeographic history around the Yunnan-Guizhou Plateau. *Zootaxa*, **3586**: 78–94.
- Saka R, Takehana Y, Suguro N, Sakaizumi M. 2003. Genetic population structure of *Lefua echigonia* inferred from allozymic and mitochondrial cytochrome b variations. *Ichthyological Research*, **50**(4): 301–309.
- Sgouros K, Page LM, Orlofske SA, Jadin RC. 2019. A revised molecular phylogeny reveals polyphyly in *Schistura* (Teleostei: Cypriniformes: Nemacheilidae). *Zootaxa*, **4559**: 349–362.
- Tang Q, Liu H, Mayden R, Xiong B. 2006. Comparison of evolutionary rates in the mitochondrial DNA cytochrome b gene and control region and their implications for phylogeny of the Cobitoidea (Teleostei: Cypriniformes). *Molecular Phylogenetics of Evolution*, **39**(2): 347–357.
- Wang J, Tang Q, Wang Z, Zhang Y, Wu Q, Peng Z. 2012. The complete mitogenome sequence of a cave loach *Triplophysa rosa* (Teleostei, Balitoridae, Nemacheilinae). *Mitochondrial DNA*, **23**(5): 366–368.