Table S1 The mitogenomic dataset of *G. lissorhynchus* generated in this study and other Garrini congeners retrieved from GenBank.

No.	Tribe	GenBank Species Name	Valid Species Name	Accession No.	Reference
1	Garrini	*Garra lissorhynchus*	*Garra lissorhynchus*	PX933509	This study
2	Garrini	*Garra manipurensis*	*Garra manipurensis*	PZ247732	Shangningam et al. 2026
3	Garrini	*Garra congoensis*	*Garra congoensis*	AP011205	Unpublished
4	Garrini	*Garra dengba*	*Garra dengba*	OL826794	Xiong et al. 2016
5	Garrini	*Garra flavatra*	*Garra flavatra*	AP011410	Yang et al. 2012
6	Garrini	*Garra kempi*	*Garra kempi*	KT601639	Li et al. 2016
7	Garrini	*Garra lamta*	*Garra lamta*	OR866911	Unpublished
8	Garrini	*Garra motuoensis*	*Garra motuoensis*	OK375462	Gong et al. 2022
9	Garrini	*Garra orientalis*	*Garra orientalis*	AP011202	Yang et al. 2012
10	Garrini	*Garra poecilura*	*Garra poecilura*	AP011411	Unpublished
11	Garrini	*Garra qiaojiensis*	*Garra qiaojiensis*	KF727438	Xiong et al. 2016
12	Garrini	*Garra rufa*	*Garra rufa*	AP011197	Yang et al. 2012
13	Garrini	*Garra salweenica*	*Garra salweenica*	KF752478	Unpublished
14	Garrini	*Garra spilota*	*Garra spilota*	AP011327	Yang et al. 2012
15	Garrini	*Garra tengchongensis*	*Garra tengchongensis*	OZ352869	Unpublished
16	Garrini	*Garra tibetana*	*Garra tibetana*	MG999836	Zhang et al. 2020
17	Garrini	*Garra yajiangensis*	*Garra yajiangensis*	OL826795	Xiong et al. 2016
18	Garrini	*Garra imberba*	*Ageneiogarra imberba*	KM255666	He et al. 2016
19	Garrini	*Discolabeo wuluoheensis*	*Discocheilus wuluoheensis*	KX840359	Zheng and Yang 2016
20	Garrini	*Discocheilus wui*	*Discocheilus wui*	KX840358	Zheng and Yang 2016
21	Garrini	*Tariqilabeo bicornis*	*Tariqilabeo bicornis*	AP013332	Unpublished
22	Garrini	*Tariqilabeo burmanicus*	*Tariqilabeo burmanicus*	AP013328	Unpublished
23	Garrini	*Tariqilabeo latius*	*Tariqilabeo latius*	AP012148	Yang et al. 2012
24	Labeonini	*Bangana decora*	*Decorus decorus*	KM999224	Li et al. 2016