

Supplementary Table S1. List of sequences of *Metagonimus* species used in phylogenetic analyses.

Species (isolate)	Stage	Experimental host	Natural host	Locality	18S rDNA	28S rDNA	ITS1+2	COI	Reference
<i>M. ciureanus</i> *	adult	N/A	<i>Phalacrocorax carbo</i>	Israel	AY245702	N/A	AY245702	N/A	Dzikowski et al. 2004
<i>M. hakubaensis</i> (AM01)	mtc.	N/A	<i>Lethenteron reissneri</i>	Japan, Towada	N/A	LC666761	N/A	LC666711	Nakao et al. 2022
<i>M. hakubaensis</i> (AM03)	mtc.	N/A	<i>Lethenteron reissneri</i>	Japan, Towada	N/A	LC666762	N/A	LC666713	Nakao et al. 2022
<i>M. hakubaensis</i> MH2	adult	<i>Mesocricetus auratus</i>	<i>Lethenteron reissneri</i>	Japan	N/A	KM061389	KM061398	KM061417	Porn 2015
<i>M. katuradai</i> MK1	adult	<i>Mesocricetus auratus</i>	<i>Tanakia limbata</i>	Japan	N/A	KM061391	KM061400	KM061418	Pornruseetairatn et al. 2016
<i>M. kanoi</i> NS094	redia	N/A	<i>Semisulcospira libertina</i>	Japan, Hokkaido	N/A	LC599533	N/A	LC599824	Nakao et al. 2022
<i>M. kogai</i> Koc4	mtc.	N/A	<i>Plecoglossus altivelis</i>	Japan, Shimanto	N/A	LC666749	N/A	LC666573	Nakao et al. 2022
<i>M. kogai</i> NS053	redia	N/A	<i>Semisulcospira libertina</i>	Japan, Nagayama-shinkawa	N/A	LC599531	N/A	LC599531	Nakao et al. 2022
<i>M. kogai</i> NS212	redia	N/A	<i>Semisulcospira libertina</i>	Japan, Nagayama-shinkawa	N/A	LC599532	N/A	LC599823	Nakao et al. 2022
<i>M. miyatai</i> H008	mtc.	N/A	<i>Pseudaspis sachalinensis</i>	Japan, Asahikawa	N/A	LC666744	N/A	LC666468	Nakao et al. 2022
<i>M. miyatai</i> NS027	redia	N/A	<i>Semisulcospira libertina</i>	Japan, Nagayama-shinkawa	N/A	LC599529	N/A	LC599811	Nakao et al. 2022
<i>M. miyatai</i> Mm1	adult	<i>Mesocricetus auratus</i>	<i>Plecoglossus altivelis</i>	Japan, Miyakoda River	HQ832624	HQ832633	HQ832615	N/A	Pornruseetairatn et al. 2016
<i>M. otsurui</i> MO1	adult	<i>Mesocricetus auratus</i>	<i>Rhinogobius flumineus</i>	Japan	N/A	KM061394	KM061404	KM061423	Pornruseetairatn et al. 2016
<i>M. otsurui</i> MO2	adult	<i>Mesocricetus auratus</i>	<i>Rhinogobius flumineus</i>	Japan	N/A	KM061395	KM061405	KM061422	Pornruseetairatn et al. 2016
<i>M. otsurui</i> Ky061	mtc.	N/A	<i>Rhinogobius kurodai</i>	Japan, Kitakyushu	N/A	LC666757	N/A	LC666630	Nakao et al. 2022
<i>M. otsurui</i> Ky066/Ky064	mtc.	N/A	<i>Rhinogobius kurodai</i>	Japan, Kitakyushu	N/A	LC666758	N/A	LC666631	Nakao et al. 2022

<i>M. pusillus</i> 15.I	adult	<i>Anas platyrhynchos</i>	<i>Rhodeus sericeus</i>	Russia, Bolshaya Ussurka River	N/A	MF407172	MF407172	MF406209	Tatonova et al. 2017
<i>M. romanicus</i> HU24-2	adult	<i>Mesocricetus auratus</i>	<i>Squalius cephalus</i>	Hungary, Szentendre	PP378514	PP378508	N/A	PP375978	This study
<i>M. romanicus</i> HU24-3	adult	<i>Mesocricetus auratus</i>	<i>Squalius cephalus</i>	Hungary, Szentendre	N/A	PP378509	N/A	PP375979	This study
<i>M. romanicus</i> HU24-4	adult	<i>Mesocricetus auratus</i>	<i>Squalius cephalus</i>	Hungary, Szentendre	N/A	PP378510	N/A	PP375980	This study
<i>M. romanicus</i> HU13-1	adult	<i>Mesocricetus auratus</i>	<i>Chondrostoma nasus</i>	Hungary, Szentendre	N/A	PP378511	N/A	PP375981	This study
<i>M. romanicus</i> HU13-2	adult	<i>Mesocricetus auratus</i>	<i>Chondrostoma nasus</i>	Hungary, Szentendre	N/A	PP378512	N/A	PP375982	This study
<i>M. romanicus</i> HU13-3	adult	<i>Mesocricetus auratus</i>	<i>Chondrostoma nasus</i>	Hungary, Szentendre	N/A	PP378513	N/A	PP375983	This study
<i>M. romanicus</i> ** MM2	mtc.	N/A	<i>Scaridinius erythropthalmus</i>	Hungary, Szentendre	N/A	OQ286071	OQ286093	OQ281688	Cech et al. 2023
<i>M. romanicus</i> ** ME1	adult	<i>Gallus gallus</i>	<i>Alburnus alburnus</i>	Hungary, Danube	N/A	OQ286072	OQ286094	OQ281689	Cech et al. 2023
<i>M. romanicus</i> ** ME3	adult	<i>Gallus gallus</i>	<i>Alburnus alburnus</i>	Hungary, Danube	N/A	OQ286074	OQ286096	OQ281690	Cech et al. 2023
<i>M. saitoi</i> Ky010/Ky011	mtc.	N/A	<i>Opsariichthys platypus</i>	Japan, Kanzaki	N/A	LC666746	N/A	LC666528	Nakao et al. 2022
<i>M. shimazui</i> Ky053	mtc.	N/A	<i>Acheilognathus rhombeus</i>	Japan, Kitakyushu	N/A	LC666753	N/A	LC666618	Nakao et al. 2022
<i>M. shimazui</i> OK05	mtc.	N/A	<i>Acheilognathus rhombeus</i>	Japan, Okayama	N/A	LC666754	N/A	LC666620	Nakao et al. 2022
<i>M. suifunensis</i> 09.II	adult	<i>Rattus norvegicus</i>	<i>Parajuga subextensa</i>	Russia, Komissarovka	N/A	KX387459	KX387484	MK736830	Shumenko et al. 2017, Tatonova et al. 2019
<i>M. takahashii</i> H131	mtc.	N/A	<i>Carassius</i> sp.	Japan, Asahikawa	N/A	LC666747	N/A	LC666542	Nakao et al. 2022
<i>M. takahashii</i> Mt1	adult	<i>Mesocricetus auratus</i>	<i>Carassius langsdorfii</i>	Japan, Kiso River	HQ832627	HQ832636	HQ832618	N/A	Pornruseetairatn et al. 2016
<i>M. yokogawai</i> Himi25/Himi27	mtc.	N/A	<i>Pseudaspius hakonensis</i>	Japan, Himi	N/A	LC666759	N/A	LC666651	Nakao et al. 2022
<i>M. yokogawai</i> My1	adult	<i>Mesocricetus auratus</i>	<i>Plecoglossus altivelis</i>	Japan, Sakuma	HQ832630	HQ832639	HQ832621	N/A	Pornruseetairatn et al. 2016
<i>M. yokogawai</i> My2	adult	<i>Mesocricetus auratus</i>	<i>Plecoglossus altivelis</i>	Japan, Sakuma	HQ832631	HQ832640	HQ832622	N/A	Pornruseetairatn et al. 2016

Outgroup									
<i>Amphimerus ovalis</i>	adult	N/A	<i>Apalone mutica</i>	U.S.A., Mississippi	AY222121	AY116876	N/A	N/A	Olson et al. 2003
<i>Apophallus muehlingi</i>	adult	N/A	<i>Larus cachinnans</i>	Russia, North Caspian region	OK384548	OK358936	N/A	N/A	Sokolov et al. 2021
<i>Clonorchis sinensis</i>	adult	N/A	<i>Homo sapiens</i>	Vietnam	JF823988	JF823989	N/A	N/A	Thaenkham et al. 2011
<i>Cryptocotyle lingua</i>	cercaria	N/A	<i>Littorina littorea</i>	Germany	AJ287492	AY222228	N/A	N/A	Littlewood & Olson 2000
<i>Euryhelminx costaricensis</i>	mtc.	N/A	<i>Hynobius lichenatus</i>	Japan, Minamisoma	AB521797	AB521797	N/A	N/A	Sato et al. 2010
<i>Opisthorchis viverrini</i>	adult	<i>Mesocricetus auratus</i>	<i>Puntius brevis</i>	Thailand	HM004211	HM004188	N/A	N/A	Thaenkham et al. 2010
<i>Metagonimoides oregonensis</i>	cercaria	N/A	<i>Pleurocera proxima</i>	U.S.A., North Carolina	N/A	JQ995473	N/A	N/A	Belden et al. 2012

mtc. – metacercaria; *as *Dexiagonimus ciureanus* in GenBank; ** as *Metagonimus* sp. in GenBank