**Supplementary Table 1.** Species/lineages of *Posthodiplostomum* spp. and other species of diplostomids used in the present study for building the phylogenetic trees, including the locality, host species; host family, GenBank accession numbers and reference.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Species** | **Locality** | **Host** | **Family** | **ITS** | **COI** | **References** |
| *Posthodiplostomum nanum* | Minas Gerais, Brazil | *Gundlachia ticaga* | Planorbidae | MH358392-393 |  | López-Hernández *et al*. 2018 |
| *Posthodiplostomum* sp. 9 | South Africa | *Tilapia sparrmanii* | Cichlidae | MK604881 |  | Hoogendoorn *et al*. 2019 |
| *Posthodiplostomum* sp. 5 SAL-2008 | St. Lawrence River, Quebec, Canada, | *Lepomis gibbosus* | Centrarchidae | HM064958 |  | Locke *et al*. 2010 |
| *Posthodiplostomum cuticola* | Hungary | *Abramis brama*  *Rutilus rutilus*  *Scardinius erythrophthalmus* | Cyprinidae  Cyprinidae  Cyprinidae | MN080286  MN080289  MN080291-292 |  | Cech *et al*. 2020 |
| *Posthodiplostomum brevicaudatum* | Lake Atanasovsko, Bulgaria, | *Gasterosteus aculeatus* | Gasterosteidae | KX931430-432  KX931436-440 |  | Stoyanov *et al*. 2017 |
| *Posthodiplostomum* sp. 3 SAL-2008 | St. Lawrence River, Quebec, Canada | *Lepomis gibbosus* | Centrarchidae | HM064951-955  HM064947  HM064949  HM064957 |  | Locke *et al*. 2010 |
| *Posthodiplostomum centrarchi* | River Danube, Slovakia | *Lepomis gibbosus* | Centrarchidae | KX931441-442 |  | Stoyanov *et al*. 2017 |
| *Posthodiplostomum centrarchi* | Hungary | *Gallus gallus* (Adults, experimentally infected)  *Lepomis gibbosus* | Phasianidae  Centrarchidae | MN080274-275  MN080280-284  MN080288 |  | Cech *et al*. 2020 |
| *Posthodiplostomum* cf*. minimum* | Ogosta Reservoir, Bulgaria | *Lepomis gibbosus* | Centrarchidae | MF171004  MF170998 |  | Kvach *et al*. 2017 |
| *Posthodiplostomum* sp. 3 DK-2018 | Ohio, River, Illinois, USA. | *Lepomis* spp. | Centrarchidae | MG857103-105 |  | Boone *et al*. 2018 |
| *Posthodiplostomum* sp. 8 DK-2018 | Ohio, River, Illinois, USA | *Micropterus* spp. |  | MG857110-112 |  | Boone *et al*. 2018 |
| *Posthodiplostomum* sp. 2 DK-2018 | Ohio, River, Illinois, USA | *Lepomis humilis* | Centrarchidae | MG857108-109 |  | Boone *et al*. 2018 |
| *Mesoophorodiplostomum pricei* | St. Lawrence River, Quebec, Canada | *Morone americana* | Moronidae | HM064959-960 |  | Locke *et al*. 2010 |
| *Ornithodiplostomum* sp. 1 SAL-2008 | St. Lawrence River, Quebec, Canada | *Percina caprodes* | Percidae | HM064932-937 |  | Locke *et al*. 2010 |
| *Ornithodiplostomum scardinii* | Lake Macha, Czech | *Scardinius erythrophthalmus* | Cyprinidae | KX931443 |  | Stoyanov *et al*. 2017 |
| *Ornithodiplostomum* sp. 3 SAL-2008 | St. Lawrence River, Quebec, Canada | *Notemigonus crysoleucas*  *Pimephales promelas* | Cyprinidae  Cyprinidae | HM064939  HM064940-942 |  | Locke *et al*. 2010 |
| *Ornithodiplostomum* sp. 4 SAL-2008 | St. Lawrence River, Quebec, Canada | *Pimephales promelas* | Cyprinidae | HM064943-944 |  | Locke *et al*. 2010 |
| *Ornithodiplostomum* sp. 8 SAL-2008 | St. Lawrence River, Quebec, Canada | *Pimephales promelas* | Cyprinidae | HM064946 |  | Locke *et al*. 2010 |
| *Tylodelphys azteca* | Zacapu, Lake, Michoacán, Mexico  Lago de los Reyes Aztecas, Tlahuác,  Distrito Federal, Mexico | *Skiffia lermae*  *Podilymbus podiceps* | Goodeidae  Podicipedidae | KT175380  KT175388 |  | García-Varela *et al*. 2016 |
| *Diplostomum huronense* | N/D | N/D | ----- | AY123044 |  | Galazzo *et al*. 2002 |
| *Diplostomum indistinctum* | N/D | N/D | ----- | AY123043 |  | Galazzo *et al*. 2002 |
| *Neodiplostomum americanum* | Mississippi, USA | *Bubo virginianus* | Strigidae | KY851308-309 |  | Woodyard *et al*. 2017 |
| *Australapatemon niewiadomski* |  | *Anas platyrhynchos* | Anatidae | KT334174 |  | Blasco-Costa *et al*. 2016 |
| *Parastrigea plataleae* | Topolobampo, Sinaloa, Mexico | *Platalea ajaja* | Threskiornithidae | JX977836 |  | Herández-Mena *et al*. 2014 |
| *Uvulifer spinatus* | Soto la Marina, Tamaulipas, Mexico  Río Purificación, Tamaulipas, Mexico | *Poecilia mexicana*  *Chloroceryle americana* | Poeciliidae  Cerylidae | MF568614  MF568616 | MF568665 | López-Jiménez *et al*. 2018 |
| *Uvulifer* sp. 1. | Río Atlapexco, Hidalgo, Mexico | *Megaceryle alcyon* | Cerylidae |  | MF568659 | López-Jiménez *et al*. 2018 |
| *Uvulifer* sp. 2. | Palo de Arquita, Nicaragua | *Hypsophrys* sp. | Cichlidae |  | MF568665 | López-Jiménez *et al*. 2018 |
| *Uvulifer* sp. 3. | San Carlos, Nicaragua | *Amphilophus longimanus* | Cichlidae |  | MF568672 | López-Jiménez *et al*. 2018 |
| *Alaria alata* | Germany | *Sus scrofa* | Suidae |  | HM022223 | Marucci *et al*. 2010  unpublished |
| *Neodiplostomum seoulense* | Korea |  |  |  | AF096233 | Lee *et al*. 1998  unpublished |
| *Bolbophorus* sp. | Mississippi, USA | *Pelecanus erythrorhynchos* | Pelecanidae |  | AF470563 | Overstreet *et al*. 2002 |
| *Bolbophorus damnificus* | Mississippi, USA | *Pelecanus erythrorhynchos* | Pelecanidae |  | AF470597 | Overstreet *et al*. 2002 |

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