NEW DATA OF PARASITIC FISH MYXOZOA (*MYXOBOLIDAE*) OF MALAYSIAN BIOTOPES

Hafiz Borkhanuddin[1, 2], Gábor Cech[1], Faizah Shaharom[2], Kálmán Molnár[1], Csaba Székely[1]

[1]*MTA Centre for Agricultural Research, Institute for Veterinary Medical Research, Budapest*
[2]*Institute of Tropical Aquaculture, Universiti Malaysia Terengganu, Malaysia*

Abstract

There are only few data on the occurrence of parasitic myxozoans on Malaysian fishes. Research up to this time has been concentrated parasites of freshwater fishes (Molnár *et al.* 2006a,b; Székely *et al*. 2009a,b). Most recently a species, *Myxobolus tambroides* was reported from the gills of an appreciated cyprinid, *Tor tambroides* collected from the Lake Kenyir Water-reservoir (Székely et al., 2012). In this study, we report on collection of new myxosporean species between 2010 and 2013. Three of them infected freshwater fishes, 1 however was collected from an estuarine fish host species. Besides morphological characterization of the species found, we made a molecular analysis on their 18S rDNA.

Myxobolus sp. I. (15% prevalence) was found in the muscle tissue of a *Labiobarbus* sp. (Cyprinidae). The spores showed up an ellipsoidal to elongate ellipsoidal shape in frontal view, measured 12.2 ± 0.85 (10.91-13.64 μm) in length and 6.7 ± 0.96 (5.45-8.18 μm) in width. *Myxobolus* sp. II (10% prevalence) was found in *Ophiocara porocephala* (Gobiidae) collected from Merang Estuarine, Kuala Terengganu. The spores of this *Myxobolus* sp. were roundish or circular shape, 10.3 ± 0.43 (9.3-10.6 μm) in length and 8.6 ± 0.38 (7.98-9.26 μm) in width in valvular view, and biconvex in sutural view. *Myxidium* sp. I (66.7% prevalence) was found in the gall bladder of *Notopterus notopterus* (Notopteridae). The spores of this species showed ellipsoidal to elongate ovoid shape, 14.7 ± 0.6 (13.8-16.03 μm) in length and 6.34 ± 0.59 (5.45-7.73 μm) in width in frontal view. *Myxidium* sp. II (15.4% prevalence) was found in the gall bladder of *Tor tambroides* (Cyprinidae). Spores of *Myxidium* sp. II had an oblong to elongate ovoid shape, and measured 24.1 ± 1.0 (23.9-25.6 μm) in length and 10.6 ± 1.0 (9.6-13.2 μm) in width in frontal view.

Sequences of *Myxobolus* sp. I resembled to *M. cyprini* with 94.6% similarity; while *Myxobolus* sp. II showed closest similarity with 78.4% to *M. nagaraensis* respectively. For the *Myxidium* sp. I, partial sequences of the specimen showed 90.6% similarity to *M. cuneiforme*; while complete sequences of *Myxidium* sp. II specimen collected from *T. tambroides* showed 87.2% identity to *M. anatidum*. Phylogenetic analyses of the 18S rDNA were performed to estimate and analyze relationships between myxozoan entities.

Acknowledgements: OTKA K 100132 and Malaysian Governmental Scholarship