Detection of Infectious Spleen and Kidney Necrosis Virus (ISKNV) Species inthe Genus Megalocytivirus in Guppy (Poecilia reticulata) in the Western, North-Western and Central Provinces of Sri Lanka

K.L.N. Ananda[1], A.W. Kalupahana[1], S.H.N.P de Silva[2], S.S.S.de S. Jagoda*[1]

[1]*Centre for Aquatic Animal Disease Diagnosis and Research, Department of VeterinaryPathobiology, Faculty of Veterinary Medicine and Animal Science, University of Peradeniya*
[2]*Department of Crop Science, Faculty of Agriculture, University of Peradeniya*
*samanthika@vet.pdn.ac.lk

Megalocytiviruses are considered as emerging viral pathogens of fish. Heavymortalities associated with megalocytiviral infections have caused seriouseconomic losses to the ornamental fish industry in South-East Asia. The objective of this study was to detect the presence of *Megalocytivirus* in guppy fish (*Poeciliareticulata*) collected from major ornamental fish producing areas of the country and to find out the phylogenetic relationship among viral isolates. A total of 57 samples of guppy (10 fish per sample, one sample per variety from each farm) were collected by visiting thirty ornamental fish farms located in the Western (WP), North-Western (NWP) and Central (CP) provinces. From each fish sample (n=10), a pooled gill tissue sample was prepared by obtaining gill clips from each fish. Total DNA was extracted using a commercial DNA extraction kit. The presence of *Megalocytivirus* was detected by a nested polymerase chain reaction (PCR) that amplifies the major capsid gene of the virus. A total of 13 [31.8% (7/22)-WP; 19% (4/21)-NWP; 14.3% (2/14)-CP] guppy samples were found to be positive for *Megalocytivirus* by PCR, with a positive rate of 22.8%. The highest occurrence of the virus was observed in guppy collected from the WP. To further evaluate the genetic variation, the nucleotide sequences of major capsid protein (MCP) gene from 8 selected isolates were compared. Sequencing analysis showedthat all MCP gene sequences of the present study had 98.4%~100% nucleotide sequence similarity to the MCP gene sequence of ISKNV species, irrespective of the geographical region confirming that ISKNV is the predominant species of *Megalocytivirus* prevalent in guppies sampled. Phylogenetic analysis also showed that the strains in this study were strongly associated with ISKNV species. This study confirms the presence of *Megalocytivirus* among apparently healthy guppiescultured in Sri Lanka. Free movement of *Megalocytivirus*-infected fish within the country could lead to the introduction of the virus to *Megalocytivirus* free areas. Further studies are required to elucidate the local epidemiology of*Megalocytivirus* infection in guppy, a species with a high economic significance in ornamental fish farming in Sri Lanka.

Keywords: Guppy (*Poecilia reticulata)*, *Megalocytivirus*, Ornamental fish, ISKNV

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