

Template for Taxonomic Proposal to the ICTV Executive Committee To Create a new Genus in a Family

Code[†] To create a new genus in the family^{°*}

Code[†] To name the new genus*

Code[†] To designate the species
As the type species of the new genus*

Code[†] To designate the following viruses as species of the new genus*:

Infectious spleen and kidney necrosis virus

[†] Assigned by ICTV officers

[°] leave blank if inappropriate or in the case of an unassigned genus

* repeat these lines and the corresponding arguments for each genus created in the family

Author(s) with email address(es) of the Taxonomic Proposal

VG Chinchar
chinchar@microbio.umsmed.edu>

New Taxonomic Order

Order **n.a.**
Family ***Iridoviridae***
Genus ***Megalocytivirus***
Type Species ***Infectious spleen and kidney necrosis virus***
List of Species in the genus
List of Tentative Species in the Genus
List of Unassigned Species in the Family

Argumentation to choose the type species in the genus

All isolates thus far examined appear to be strains of one species. We have chosen ISKNV as the type species because it was the first virus within this genus whose genome was fully sequenced and reported in the literature.

Species demarcation criteria in the genus

Based on serological, histopathological, and sequence analyses we propose a fifth genus within the *Iridoviridae*. This new genus includes a single viral species ISKNV and numerous similar viruses isolated from over 20 species of marine and freshwater fish. Megalocytiviruses are distinguished from members of the *Ranavirus* and *Lymphocystivirus* genera by sequence analysis of key viral genes (i.e., megalocytiviruses show <50% sequence similarity to rana- and lymphocystiviruses), serological studies (i.e., limited cross reactivity to other genera), and its unique histopathology, i.e., the formation of greatly enlarged cells owing to the growth of an inclusion body. It is this latter feature which suggests the name of the virus.

List of species in the created genus

Infectious spleen and kidney necrosis virus (ISKNV)

List of tentative species in the created genus

none

Argumentation to create a new genus:

We suggest that ISKNV and closely related isolates constitute a novel genus within the family *Iridoviridae*. These viruses are distantly related to other iridoviruses based on sequence identities/similarities, show poor to no cross-reactivity in serological studies, and display a unique cytopathology, the presence of greatly enlarged cells owing to the presence of a giant inclusion body. By these criteria they can be readily distinguished from ranaviruses and lymphocystiviruses.

Origin of the proposed genus name

Megalocytivirus: from the Greek “megalo” + “cyti” meaning “enlarged cell.”

References

He et al., (2001). Complete genome analysis of the mandarin fish infectious spleen and kidney necrosis iridovirus. *Virology* 291, 126 – 139.

Nakajima et al., (1998). Viral diseases in cultured marine fish in Japan. *Fish Pathol.* 33, 181 – 188.

Sudthongkong et al., (2002). Viral DNA sequences of genes encoding the ATPase and the major capsid protein of tropical iridovirus isolates which are pathogenic to fishes in Japan, South China Sea, and Southeast Asian countries. *Arch. Virol.* 47, 2089 – 2109.

Zhang QT and Li ZQ. (1999). Detection of viral pathogen for diseased mandarin fish with pathological observations. *Acta Hydrobiol. Sinica* 23, 151 – 154.

Annexes: