

Template for Taxonomic Proposal to the ICTV Executive Committee Creating Unassigned Species in an existing Family

Code[†] To designate the following viruses as unassigned species in the family:

Poinsettia mosaic virus (PnMV)

[†] Assigned by ICTV officers

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

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New Taxonomic Order

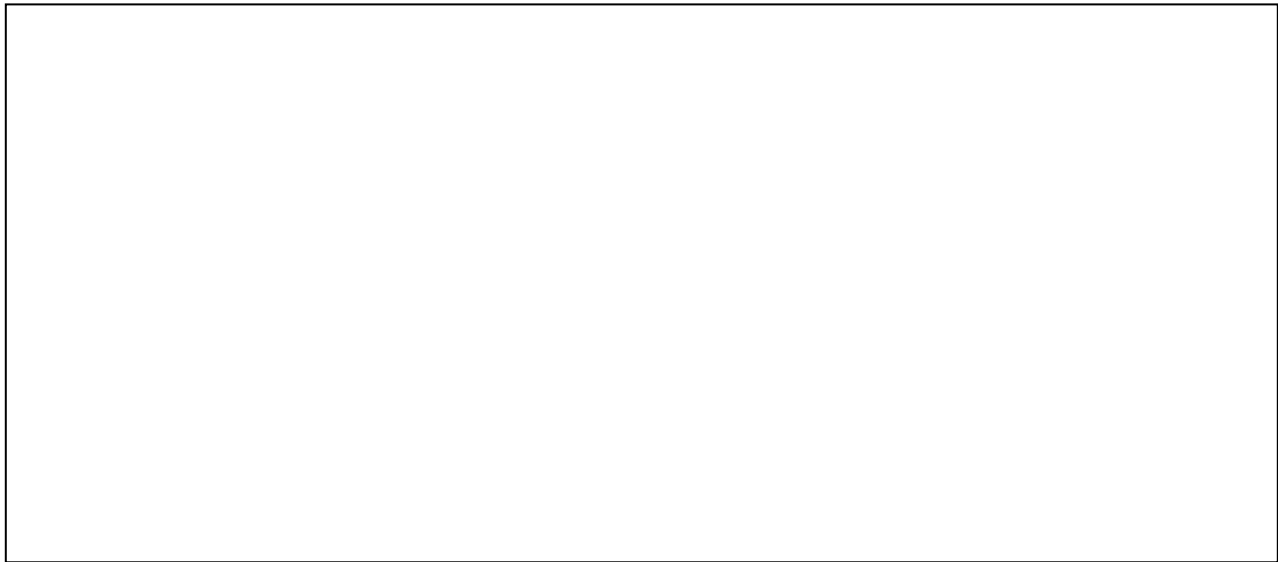
Order

Family *Tymoviridae*

List of Unassigned Species in the Family *Poinsettia mosaic virus*

Argumentation to justify the designation of unassigned species in the family

Species demarcation criteria in the genera



Argumentation to justify the designation of unassigned species in the family

The Tymoviridae Study Group proposes that *Poinsettia mosaic virus* (PnMV) be listed as an unassigned virus within the *Tymoviridae*. The Tymovirus and Marafivirus Study Groups recently recommended a change in the listing of PnMV from a tentative tymovirus to tentative marafivirus. With the recent creation of the Family Tymoviridae, we now recognise an opportunity to list PnMV more accurately as a member of the family unassigned to a genus.

The complete genomic sequence of PnMV (Bradel et al., 2000) reveals a genome more closely related to the marafiviruses OBDV and MRFV, for which complete genome sequences are also known (Edwards et al., 1997; Hammond and Ramirez, 2001) than to the tymoviruses. PnMV is similar to the marafiviruses in possessing a genome that encodes a long ORF in which the replication protein is fused to the coat protein coding regions. An identical “marafibox” sequence that differs in 3 nucleotide positions from the tymobox sequence is also shared by the above viruses. PnMV RNA is polyadenylated, whereas tymoviruses possess a tRNA-like structure at the 3' end.

However, PnMV differs drastically from the marafiviruses in its biology, which more closely resembles that of the tymoviruses. PnMV is readily transmissible mechanically, amplifies in leaf tissues and is not phloem-limited, has no known insect vector in which it can replicate, and expresses one form of coat protein (marafiviruses produce two forms). Like tymoviruses, PnMV induces vesicles and membrane invaginations at the chloroplast surface, though these are distinct from tymovirus-induced vesicles in being bound by a single membrane.

Sequence comparisons among the set of RdRp and coat proteins encoded by members of the *Tymoviridae* supports a classification of PnMV outside the *Marafivirus*, *Tymovirus* and *Maculavirus* genera (Martelli et al., 2002)..

List of created Unassigned Species in the family

Poinsettia mosaic virus

References

Bradel, B.G., Preil, W.X. and Jeske, H. (2000). Sequence analysis and genome organisation of Poinsettia mosaic virus (PnMV) reveal closer relationship to marafiviruses than to tymoviruses. *Virology*, **271**, 289-297.

Edwards, M.C., Zhang, Z. and Weiland, J.J. (1997). Oat blue dwarf marafivirus resembles the tymoviruses in sequence, genome organization, and expression strategy. *Virology*, **232**, 217-229.

Hammond, R.W. and Ramirez, P. (2001). Molecular characterization of the genome of *Maize rayado fino virus*, the type member of the genus *Marafivirus*. *Virology*, **282**, 338-347.

Martelli, G.P., Sabanadzovic, S., Abou-Ghanem-Sabanadzovic, N., Edwards, M.C., and Dreher, T.W. (2002). The family *Tymoviridae*. *Arch. Virol.*, **147**, 1837-1846.

Annexes: