

Template for Taxonomic Proposal to the ICTV Executive Committee

Creating Species in an existing genus

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

belonging to the family[°] :

Papaya leaf curl China virus
Papaya leaf curl Guangdong virus

[†] 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

Geminiviridae

Genus

Begomovirus

Type Species

Bean golden mosaic virus

List of Species in the genus

Papaya leaf curl China virus

Papaya leaf curl China virus-[G2]

Papaya leaf curl China virus-[G8]

Papaya leaf curl China virus-[G10]

Papaya leaf curl China virus-[G30]

Papaya leaf curl Guangdong virus

Papaya leaf curl Guangdong virus-[GD2]

List of Tentative Species in the Genus

List of Unassigned Species in the Family

Argumentation to justify the designation of new species in the genus

Species demarcation criteria in the genus

The following criteria should be used as a guideline to establish taxonomic status:

- Number of genomic components. Presence or absence of a DNA B component
- Organization of the genome. Presence or absence of ORF AV2.
- Nucleotide sequence identity. Because of the growing number of recognized species, derivation of the complete nucleotide sequence will be necessary to distinguish species. Nucleotide sequence identity <89% is generally indicative of a distinct species. However, decisions based on nucleotide sequence comparisons, particularly when approaching this value, must take into account the biological properties of the virus. The taxonomic status of a recombinant will depend on relatedness to the parental viruses, the frequency and extent of recombination events, and its biological properties compared with the parental viruses. Information concerning the diversity of related recombinants may be helpful to determine status.
- *Trans*-replication of genomic components. The inability of Rep protein to *trans*-replicate a genomic component suggests a distinct species. However, when considering this criterion, it should be kept in mind that small changes in the Rep binding site of otherwise identical viruses might prevent functional interaction and recombination involving a small part of the genome may confer replication competence on a distinct species.
- Production of viable pseudorecombinants. Account should be taken of the fitness of the pseudorecombinant in the natural host(s) of the parental viruses. It should be ensured that pseudorecombinant viability is not the result of inter-component recombination.
- Coat protein characteristics. Amino acid sequence identity <90% and substantial serological differences may be indicative of a distinct species in the first instance, but derivation of the

Argumentation to justify the designation of new species in the genus

The 4 isolates of the first species are between 89 and 95% identical in their full A sequence.
The two species are less than 80% identical to any other begomo sequence.

List of created Species in the genus

Papaya leaf curl China virus

Papaya leaf curl China virus-[G2]

Papaya leaf curl China virus-[G8]

Papaya leaf curl China virus-[G10]

Papaya leaf curl China virus-[G30]

Papaya leaf curl Guangdong virus

Papaya leaf curl Guangdong virus-[GD2]

References

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