

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

Code[†] **FT2003.103I.01** To designate the following viruses as species in the genus:

Betatetravirus

belonging to the family[°] : ***Tetraviridae***

Euprosterona elaeasa virus (EeV)
Providence virus (PrV).

[†] Assigned by ICTV officers

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

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Chair *Tetraviridae* SG

New Taxonomic Order

| | |
|---|---|
| Family | <i>Tetraviridae</i> |
| Genus | <i>Betatetravirus</i> |
| Type Species | |
| Species in the Genus | <i>Euprosterona elaeasa</i> virus (EeV) <i>Providence virus</i> (PrV). |
| Tentative Species in the Genus | |
| Unassigned Species in the family | |

Argumentation to justify the designation of new species in the genus

Species demarcation criteria in the genus



Argumentation to justify the designation of new species in the genus

PrV has a single-stranded positive sense genome with a monopartite genome organization similar to viruses in the genus *Betatetravirus* and a predicted capsid processing strategy similar to that of SaV/TaV in this genus (Pringle et al., 2003). The structural proteins are 60.3 kDa and 7.4 kDa in size, within the ranges for tetraviruses. The virion has $T=4$ icosahedral symmetry. PrV was found as a persistent long-term infection of a cell line (MG8) from the midgut of *Helicoverpa zea* (Lepidoptera: Noctuidae), but its presence in field-collected insects has not been studied.

The addition of EeV and PrV to the *Betatetravirus* genus is consistent with the current criteria for membership of this genus. It does however add to certain taxonomic inconsistencies, that will need to be addressed in a future revision of the criteria for the family. The replicases of EeV and SaV/TaV on the one hand, and PrV on the other, are not related to that of N β V or to each other, and PrV has an additional long non-structural ORF not found in any other tetravirus. Furthermore, the sequence of the PrV structural proteins is clustered with those of the omegatetraviruses (HaSV and N ω V) rather than of the betatetraviruses, which include the viruses (SaV/TaV) whose capsid expression strategy PrV appears to share.

List of created Species in the genus

The recognised members of the *Betatetravirus* genus will comprise the species as shown below. *Nudaurelia β virus* remains the type member. Official virus species names are in italics. Tentative virus species names, alternative names(), strains, or serotypes are not italicized. Virus names, genome sequence accession numbers [], and assigned abbreviations () are:

| | | | |
|--|---------------------------------------|------------|-------|
| <i>Dasychira pudibunda virus</i> | | | (DpV) |
| | (<i>Calliteara pudibunda virus</i>) | | (CpV) |
| <i>Darna trima virus</i> | | | (DtV) |
| <i>Euprosteria elaeasa virus</i> | | [AF461742] | (EeV) |
| <i>Nudaurelia capensis β virus</i> | | [AF102884] | (NβV) |
| <i>Antheraea eucalypti virus</i> | | | (AeV) |
| <i>Philosamia cynthia x ricini virus</i> | | | (PxV) |
| <i>Providence virus</i> | | [AF548354] | (PrV) |
| <i>Pseudoplusia includens virus</i> | | | (PiV) |
| <i>Thosea asigna virus</i> | | [AF82930] | (TaV) |
| | (<i>Setothosea asigna virus</i>) | | (SaV) |
| <i>Trichoplusia ni virus</i> | | | (TnV) |

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Annexes: