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

Code[†] 2006.006P.04 To designate the following as species in the genus:

Crinivirus

belonging to the family°: ***Closteroviridae***

Strawberry pallidosis-associated virus

[†] Assigned by ICTV officers
° leave blank if inappropriate or in the case of an unassigned genus

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

GP Martelli on behalf of the ICTV Study Group on *Closteroviridae*

Old Taxonomic Order

Order	
Family	***Closteroviridae***
Genus	***Crinivirus***
Type Species	***Lettuce infectious yellows virus***
Species in the Genus	**8**
Tentative Species in the Genus	**2**
Unassigned Species in the family	**5**

New Taxonomic Order

Order	
Family	***Closteroviridae***
Genus	***Crinivirus***
Type Species	***Lettuce infectious yellows virus***
Species in the Genus	**9**
Tentative Species in the Genus	**2**
Unassigned Species in the family	**5**

ICTV-EC comments and response of the SG

Species demarcation criteria in the genus

Particle size
Size of CP, as determined by deduced aa sequence data
Serological specificity using discriminatory monoclonal or polyclonal antibodies
Genome structure and organisation (number and relative location of the ORFs)
Amino acid sequence of relevant gene products (CP, CPm, HSP70) differing by more than 10%
Vector species and specificity
Magnitude and specificity of natural and experimental host range
Cytopathological features (aspects of inclusion bodies and origin of cytoplasmic vesicles)

Argumentation to justify the designation of new species in the genus

Strawberry pallidosis-associated virus (SPaV) has been described by Tzanetakis et al. (2004a, 2004b) from strawberry plants. When infected plants are grafted on *Fragaria virginiana*, marginal chlorosis and epinasty of the indicator leaves are induced, but there are no symptoms when grafted onto *Fragaria vesca.*

SPaV properties:

(i) Virus particles: Filamentous, 10-11nm in diameter and 250 to 450nm in length (likely fragmented)
(ii) dsRNA: multiple bands, the largest c. 8 kbp in size
(iii) CP: 28 kDa (determined by deduced sequence data)
(iv) Nucleic acid: two molecules of ssRNA 8067 nt (RNA-1) and 7979 nt (RNA-2) in size
(v) Genome: bipartite totally sequenced (AY488137, AY488138). RNA-1 has a large ORF encoding the replication associated proteins and a small ORF encoding a 9 kDa protein which contains two transmembrane domains. As yet, a comparable protein has not been found in other sequenced criniviruses. RNA-2 consists of 8 ORFs similar in size and position to the comparable genes of criniviruses. HSP70h and CP have a low amino acid identity (34% and no more that 43%, respectively) with comparable proteins of other sequenced criniviruses
(vi) Phylogenetic relationships: SPaV clusters with members of the genus *Crinivirus* in trees constructed with polymerase, CP, and HSP70 homologue sequences, the closest species being *Beet pseudo yellows virus* and Blackberry yellow vein associated virus.
(vii) Mechanical transmission: unsuccessful to a range of herbaceous hosts
(viii) Transmission by vectors: successful by *Trialeurodes vaporariorum* in a semi-persistent manner
(ix) Cytopathology: no information

Molecular data (genome sequence and organization) clearly show that SPaV is a member of the genus *Crinivirus*. Moreover, SPaV cannot be transmitted by sap inoculation, but has a whitefly vector, like existing members of the genus. Thus, its assignment as a definitive species in the genus *Crinivirus* is proposed

List of created Tentative Species in the genus

Strawberry pallidosis-associated virus (SPaV)

References

Tzanetakis, I.E., Halgren, A.B., Wintermantel, W.M., Keller, K.E. and Martin, R.R., 2004. Two criniviruses are associated with the strawberrt pallidosis disease. *Acta Horticulturae,* **656**: 21-26.

Tzanetakis, I.E., Halgren, A.B., W.M., Keller, K.E., Hokanson S.C., Mass J.L., McCarthy , P.L. and Martin, R.R., 2004. Identifiatin and detection of a virus associated with strawberry pallidosis disease. *Plant Disease*, **88**: 383-390.

Tzanetakis, I.E., Reed, J. and Martin, R.R., 2005. Nucleotide sequence, genome organization and phylogenetic analysis of Strawberry pallidosis-associated virus, a new member of the genus *Crinivirus. Archives of Virology*, **150**: 273-286.