

Template for Taxonomic Proposal to the ICTV Executive Committee

Creating Species in an existing genus

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

Polerovirus

belonging to the family[°] : *Luteoviridae*

Carrot red leaf virus
Carrot red leaf virus-UK1 (CRLV-UK1)
[AY695933](#)

[†] Assigned by ICTV officers

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

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Old Taxonomic Order

Order
Family Luteoviridae
Genus
Type Species
Species in the Genus
Tentative Species in the Genus
Unassigned Species in the family Carrot red leaf virus

New Taxonomic Order

Order
Family Luteoviridae
Genus Polerovirus
Type Species
Species in the Genus Carrot red leaf virus
Tentative Species in the Genus
Unassigned Species in the family

ICTV-EC comments and response of the SG

Species demarcation criteria in the genus

- Particles are thought to have 180 subunits arranged in a T=3 icosahedron. Virion buoyant density in CsCl is 1.39-1.42; S_{20w} is 115-127S.
- Genome sizes range from 5,641 nt for BWYV to 5,882 nt for PLRV.
- The polerovirus genome has a VPg linked to the 5'-end of the genome RNA.
- Poleroviruses possess an ORF0 and a non-coding region between ORF2 and ORF3 of about 200 nt.
- The translation products of ORF1 and ORF2 form replication-related proteins, which are most similar to those of sobemoviruses.
- Frameshift from ORF1 into ORF2 occurs upstream of the termination of ORF1.
- Polerovirus genomes differ from those of enamoviruses in that ORF4 is present within ORF3 and ORF5 is about 1400 nt.

Argumentation to justify the designation of new species in the genus

- The nucleotide sequence of the CRLV genome (NC_006265) is 5723 nt in length and contains six large ORFs, similar to members of the Polerovirus genus.
- The CLRV genome contains an ORF0, which is found only in polero- and enamoviruses and an ORF 4, which is found only in luteo- and poleroviruses.
- ORFs 1 and 2 overlapped by 475 nt compared to less than 100 nt for members of the Luteovirus genus.
- Conceptual translation of ORFs 1 and 2 is predicted to encode a sobemovirus-like RdRp.
- Like poleroviruses, ORFs 2 and 3 were separated by 228. Poleroviruses possess intergenic regions of more than 200 nt, while luteoviruses typically have intergenic regions of about 100 nt.
- ORF5 of CLRV is 1473 nt in length compared to less than 800 nt for enamoviruses.

List of created Species in the genus

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References

- Huang, L., Naylor, M., Pallet, D.W., Reeves, J., Cooper, J.I. and Wang, H. (2005) *Carrot red leaf virus* complete genome sequence. GenBank NC_006265.
- Huang, L.F., Naylor, M., Pallett, D.W., Reeves, J., Cooper, J.I. and Wang, H. (2005) The complete genome sequence, organization and affinities of carrot red leaf virus. Arch. Virol. DOI: 10.1007/s00705-005-0537-6..

Annexes: