

Template for Taxonomic Proposal to the ICTV Executive Committee

Creating Species in an existing genus

Code † **2007.081V.04** To designate the following as species in the genus:

Circovirus

belonging to the family[°] : *Circoviridae*

Finch circovirus
Gull circovirus
Starling circovirus

† 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 | <i>Circoviridae</i> |
| Genus | <i>Circovirus</i> |
| Type Species | <i>Porcine circovirus-1</i> |
| Species in the Genus | <i>Beak and feather disease virus</i> <i>Canary circovirus</i> <i>Duck circovirus</i> <i>Goose circovirus</i> <i>Pigeon circovirus</i> <i>Porcine circovirus-1</i> <i>Porcine circovirus-2</i> |
| Tentative Species in the Genus | |
| Unassigned Species in the family | |

New Taxonomic Order

| | |
|----------------------------------|---|
| Order | |
| Family | <i>Circoviridae</i> |
| Genus | <i>Circovirus</i> |
| Type Species | <i>Porcine circovirus-1</i> |
| Species in the Genus | <i>Beak and feather disease virus</i> <i>Canary circovirus</i> <i>Duck circovirus</i> <i>Finch circovirus</i> <i>Goose circovirus</i> <i>Gull circovirus</i> <i>Pigeon circovirus</i> <i>Porcine circovirus-1</i> <i>Porcine circovirus-2</i> <i>Starling circovirus</i> |
| Tentative Species in the Genus | |
| Unassigned Species in the family | |

ICTV-EC comments and response of the SG

Species demarcation criteria in the genus

The suggested criteria demarcating species in the genus are (i) complete genome nucleotide sequence identity less than 75%, and (ii) capsid protein amino acid sequence identity less than 70%.

Argumentation to justify the designation of new species in the genus

Finch circovirus (FiCV) was characterized by Todd et al (2007) from a Gouldian finch (*Chloebia gouldiae*), following a previous report of the virus, and the genome sequence determined. The sequence demonstrates that FiCV is related to existing members of the genus *Circovirus*, with whole genome alignment showing identities to eight circoviruses in the range ***n to n%***, and capsid protein identities in the range 21 to 63%.

Gull circovirus (GuCV) was characterized by Todd et al (2007) from a herring gull (*Larus argentatus*), following previous reports of the virus, and the genome sequence determined. The sequence demonstrates that GuCV is related to existing members of the genus *Circovirus*, with whole genome alignment showing identities to eight circoviruses in the range ***n to n%***, and capsid protein identities in the range 17 to 41%.

Starling circovirus (StCV) was detected and characterized by Johne et al (2006) in European starlings (*Sturnus vulgaris*) and spotless starlings (*Sturnus unicolor*), and genome sequences determined. The sequence demonstrates that StCV is related to existing members of the genus *Circovirus*, with whole genome alignment showing identities to eight circoviruses in the range 15 to 67%, and capsid protein identities in the range 22 to 52%.

Relationships in the genus are summarized by the tree in annex 1.

List of created Species in the genus

Finch circovirus
Gull circovirus
Starling circovirus

References

Johne, R., Fernandez-de-Luco, D., Hofle, U. & Muller, H. (2006). Genome of a novel circovirus of starlings, amplified by multiply primed rolling-circle amplification. *J Gen Virol* **87**, 1189-95.

Todd, D., Bendinelli, M., Biagini, P., Hino, S., Mankertz, A., Mishiro, S., Niel, C., Okamoto, H., Raidal, S., Ritchie, B.W & Teo, G.C. (2005). *Circoviridae*. In: *Virus Taxonomy*, VIIIth Report of the International Committee for the Taxonomy of Viruses (C.M. Fauquet, M.A. Mayo, J. Maniloff, U. Desselberger, and L.A. Ball, eds), 327-334. Elsevier/Academic Press, London.

Todd, D., Scott, A.N.J., Fringuelli, E., Shivraprasad, D., Gavier-Widen, D. & Smyth, J.A. (2007). Molecular characterization of novel circoviruses from finch and gull. *Avian Pathol* **36**, 75-81.

Annexes:

Annex 1: Neighbour-joining phylogenetic tree built with CP amino acid sequences

(Beak and feather disease virus BFDV, Canary circovirus CaCV, Duck circovirus DuCV, Finch circovirus FiCV, Goose circovirus GoCV, Gull circovirus GuCV, Pigeon circovirus PiCV, Porcine circovirus-1 PCV-1, Porcine circovirus-2 PCV-2, Starling circovirus, StCV).

