MODULE 1: **TITLE, AUTHORS, etc**

Code assigned:	*2016.014aD*	(to be completed by ICTV officers)

Short title: 1 new species in the genus *Alphapolyomavirus*

Modules attached 2 ☒ 3 ☐ 4 ☐ 5 ☐
6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐

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List the ICTV study group(s) that have seen this proposal:

	Polyomaviridae SG

ICTV Study Group comments (if any) and response of the proposer:

Date first submitted to ICTV: June 18, 2016
Date of this revision (if different to above): June 30, 2016

ICTV-EC comments and response of the proposer:

Code	*2016.014aD*	(assigned by ICTV officers)

To create 1 new species within:

Genus:	*Alphapolyomavirus*
Subfamily:	
Family:	*Polyomaviridae*
Order:	

Name of new species:	Representative isolate: (only 1 per species please)	GenBank sequence accession number(s)
Rattus norvegicus polyomavirus 1	Rattus norvegicus polyomavirus 1 (abbr.: RnorPyV1); isolate 3690	KR075943

Reasons to justify the creation and assignment of the new species:

1. Genome of RnorPyV1 is published (Ehlers et al., 2015[1]). This fulfills number 1 of the species definition criteria published in 2016 by the Polyomaviridae Study Group and ratified by ICTV in May 2016 (2015.015a-aaD.A.v2.Polyomaviridae_rev[2]; Calvignac Spencer et al. 2016[3]).
2. RnorPyV1 has a genome organization typical for members of the *Polyomaviridae*. This fulfills number 2 of the species definition criteria.
3. There is sufficient information that RnorPyV1is naturally hosted by members of the host species *Rattus norvegicus*: 22/33 individuals from 2 locations in Germany were PCR-positive (sequence confirmed). Six full genomes available (deposited in GenBank under the accession numbers KR065723, KR065724, KR075943−KR075946). This fulfills number 3 of the species definition criteria.
4. Using the MAFFT module in Geneious 9.1.3., the LTAg CDS of RnorPyV1 was compared pairwise with those of other PyVs. RnorPyV1 (KR075943) LTAg CDS and LTAg CDS of hamster polyomavirus isolate Berlin-Buch (species *Mesocricetus auratus polyomavirus 1*) were most closely related (37 % nucleic acid diversity). This fulfills number 4 of the species definition criteria (>15 % observed genetic distance on basis of LTAg CDS).
5. RnorPyV1 clusters with members of the genus *Alphapolyomavirus* (Figure in Appendix).

additional material in support of this proposal

References:

[1] Ehlers, B., Richter, D., Matuschka, F. R., & Ulrich, R. G. (2015). Genome sequences of a rat polyomavirus related to murine polyomavirus, Rattus norvegicus polyomavirus 1. *Genome Announcements*, *3*(5), e00997-15.

[2] Calvignac-Spencer, S., Feltkamp, M., Daugherty, M.D., Moens, U., Ramqvist, T., Johne, R., Ehlers, B. (2015). ICTV taxonomic proposal 2015.015a-aaD.A.v2.Polyomaviridae_rev. In the family *Polyomaviridae*, create 4 genera (*Alphapolyomavirus, Betapolyomavirus, Gammapolyomavirus* and *Deltapolyomavirus*) and reclassify 8 existing species. http://www.ictvonline.org/proposals-15/2015.015a-aaD.A.v2.Polyomaviridae_rev.pdf

[3] Calvignac-Spencer, S., et al. (2016) A taxonomy update for the family *Polyomaviridae*. *Archives of Virology* 161(6), 1739-1750.

Supporting Figure. Maximum likelihood tree based on an alignment of large T sequences (503 amino acid positions). Bayesian analyses supported a very similar topology. Weakly supported branches are grey (approximate likelihood ratio test and/or posterior probability <0.95). Proposed novel species are in enlarged, black font.

Centropristis striata polyomavirus 1

Pyrrhula pyrrhula polyomavirus 1
Aves polyomavirus 1
Pygoscelis adeliae polyomavirus 1
Serinus canaria polyomavirus 1
Anser anser polyomavirus 1
Cracticus torquatus polyomavirus 1
Corvus monedula polyomavirus 1

Bos taurus polyomavirus 1
Delphinus delphis polyomavirus 1

Microtus arvalis polyomavirus 1
Myodes glareolus polyomavirus 1
Human polyomavirus 4
Human polyomavirus 3
Macaca mulatta polyomavirus 1
Human polyomavirus 2
Pan troglodytes polyomavirus 8
Human polyomavirus 1
Papio cynocephalus polyomavirus 2
Chlorocebus pygerythrus polyomavirus 2
Cercopithecus erythrotis polyomavirus 1
Equus caballus polyomavirus 1
Loxodonta africana polyomavirus 1
Meles meles polyomavirus 1
Zalophus californianus polyomavirus 1
Desmodus rotundus polyomavirus 1
Artibeus planirostris polyomavirus 1
Pteronotus davyi polyomavirus 1
Pteronotus parnellii polyomavirus 1
Miniopterus africanus polyomavirus 1
Cebus albifrons polyomavirus 1
Saimiri boliviensis polyomavirus 1
Saimiri sciureus polyomavirus 1
Acerodon celebensis polyomavirus 2
Dobsonia moluccensis polyomavirus 3
Dobsonia moluccensis polyomavirus 2
Mus musculus polyomavirus 2
Myotis lucifugus polyomavirus 1
Mastomys natalensis polyomavirus 1

Human polyomavirus 7
Human polyomavirus 6
Human polyomavirus 11
Human polyomavirus 10

Pan troglodytes polyomavirus 7
Pan troglodytes polyomavirus 6
Human polyomavirus 9
Macaca fascicularis polyomavirus 1
Chlorocebus pygerythrus polyomavirus 3
Papio cynocephalus polyomavirus 1
Human polyomavirus 12
Dobsonia moluccensis polyomavirus 1
Pteropus vampyrus polyomavirus 1
Acerodon celebensis polyomavirus 1
Ateles paniscus polyomavirus 1
Human polyomavirus 8
Pongo pygmaeus polyomavirus 1
Mus musculus polyomavirus 1
Mesocricetus auratus polyomavirus 1
Rattus norvegicus polyomavirus 1
Pan troglodytes polyomavirus 5
Pongo abelii polyomavirus 1
Pan troglodytes polyomavirus 4
Piliocolobus rufomitratus polyomavirus 1
Chlorocebus pygerythrus polyomavirus 1
Human polyomavirus 13
Pan troglodytes polyomavirus 1
Otomops martiensseni polyomavirus 1
Molossus molossus polyomavirus 1
Sturnira lilium polyomavirus 1
Artibeus planirostris polyomavirus 2
Procyon lotor polyomavirus 1
Pan troglodytes polyomavirus 2
Human polyomavirus 5
Gorilla gorilla polyomavirus 1
Pan troglodytes polyomavirus 3
Eidolon helvum polyomavirus 1
Cardioderma cor polyomavirus 1
Otomops martiensseni polyomavirus 2
Carollia perspicillata polyomavirus 1
Artibeus planirostris polyomavirus 3

Genus
Alphapolyomavirus
Betapolyomavirus
Gammapolyomavirus
Deltapolyomavirus
Unclassified

0.5