

**Part 1:** **TITLE, AUTHORS, APPROVALS, etc**

|  |  |  |
| --- | --- | --- |
| **Code assigned:** | **2021.002A** |  |
| **Short title:** Rename existing species in the family (*Halopanivirales*: *Sphaerolipoviridae*) | | |
|  | | |

**Author(s) and email address(es)**

|  |  |
| --- | --- |
| Oksanen HM, Demina TA, Dyall-Smith M | [hanna.oksanen@helsinki.fi](mailto:hanna.oksanen@helsinki.fi);  [tatiana.demina@helsinki.fi](mailto:tatiana.demina@helsinki.fi);  [mike.dyallsmith@gmail.com](mailto:mike.dyallsmith@gmail.com) |

**Author(s) institutional address(es) (optional)**

|  |
| --- |
| Molecular and Integrative Biosciences Research Programme, Faculty of Biological and Environmental Sciences, University of Helsinki, Helsinki, Finland [HMO]  Department of Microbiology, Faculty of Agriculture and Forestry, University of Helsinki, Helsinki, Finland [TAD]  Computational Biology Group, Max Planck Institute of Biochemistry, Martinsried, Germany and Veterinary Biosciences, Faculty of Veterinary and Agricultural Sciences, University of Melbourne, Parkville, Australia [MD-S] |

**Corresponding author**

|  |
| --- |
| Hanna M. Oksanen |

**List the ICTV Study Group(s) that have seen this proposal**

|  |
| --- |
|  |

**ICTV study group comments and response of proposer**

|  |
| --- |
|  |

**Authority to use the name of a living person**

|  |  |
| --- | --- |
| **Is any taxon name used here derived from that of a living person (Y/N)** | N |

|  |  |  |
| --- | --- | --- |
| **Taxon name** | **Person from whom the name is derived** | **Permission attached (Y/N)** |
|  |  |  |
|  |  |  |
|  |  |  |

**Submission dates**

|  |  |
| --- | --- |
| Date first submitted to SC Chair | June 3, 2021 |
| Date of this revision (if different to above) |  |

**ICTV-EC comments and response of the proposer**

|  |
| --- |
|  |

**Part 3:** **TAXONOMIC PROPOSAL**

**Name of accompanying Excel module**

|  |
| --- |
| 2021.002A.R.Sphaerolipoviridae\_species\_renaming.xlsx |

**Abstract**

|  |
| --- |
| We propose to standardize all the four species names in the family *Sphaerolipoviridae* to follow the current binomial virus species name format. |

**Text of proposal**

|  |  |
| --- | --- |
| |  | | --- | | The family *Sphaerolipoviridae* contains a single genus *Alphasphaerolipovirus* and four species. The viruses belonging to the family are archaeal icosahedral tailless viruses with an internal lipid membrane. The virions are ~80 nm in diameter, and the capsid triangulation number is pseudo *T =* 28 dextro [1-4]. The genomes are linear dsDNA molecules of approximately 28-31 kb [5-8].  We propose a revision of all the four species names in the family *Sphaerolipoviridae* to follow the current binomial virus species name format. The proposed species names consist of the genus name and the specific epithet without a hyphen (if previously present), e.g., *Alphasphaerolipovirus HCIV1*. | |

**Supporting evidence**

**References**

1. De Colibus L, Roine E, Walter TS, Ilca SL, Wang X, Wang N, Roseman AM, Bamford D, Huiskonen JT, Stuart DI (2019) Assembly of complex viruses exemplified by a halophilic euryarchaeal virus. Nat Commun. 10(1):1456. doi: 10.1038/s41467-019-09451-z. PMID: 30926810
2. Gil-Carton D, Jaakkola ST, Charro D, Peralta B, Castaño-Díez D, Oksanen HM, Bamford DH, Abrescia NGA (2015) Insight into the assembly of viruses with vertical single β-barrel major capsid proteins. Structure 23(10):1866-1877. doi: 10.1016/j.str.2015.07.015. PMID: 26320579.
3. Jäälinoja HT, Roine E, Laurinmäki P, Kivelä HM, Bamford DH, Butcher SJ (2008) Structure and host-cell interaction of SH1, a membrane-containing, halophilic euryarchaeal virus. Proc Natl Acad Sci U S A. 105(23):8008-13. doi: 10.1073/pnas.0801758105. PMID: 18515426
4. Santos-Pérez I, Charro D, Gil-Carton D, Azkargorta M, Elortza F, Bamford DH, Oksanen HM, Abrescia NGA (2019). Structural basis for assembly of vertical single β-barrel viruses. Nat Commun. 10(1):1184. doi: 10.1038/s41467-019-08927-2. PMID: 30862777
5. Bamford DH, Ravantti JJ, Rönnholm G, Laurinavicius S, Kukkaro P, Dyall-Smith M, Somerharju P, Kalkkinen N, Bamford JK (2005) Constituents of SH1, a novel lipid-containing virus infecting the halophilic euryarchaeon Haloarcula hispanica. J Virol 79(14):9097-9107. doi: 10.1128/JVI.79.14.9097-9107.2005. PMID: 15994804
6. Demina TA, Pietilä MK, Svirskaitė J, Ravantti JJ, Atanasova NS, Bamford DH, Oksanen HM (2016) Archaeal Haloarcula californiae icosahedral virus 1 highlights conserved elements in icosahedral membrane-containing DNA viruses from extreme environments. mBio 7(4):e00699-16. doi: 10.1128/mBio.00699-16. PMID: 27435460
7. Jaakkola ST, Penttinen RK, Vilén ST, Jalasvuori M, Rönnholm G, Bamford JK, Bamford DH, Oksanen HM (2012) Closely related archaeal *Haloarcula hispanica* icosahedral viruses HHIV-2 and SH1 have nonhomologous genes encoding host recognition functions. J Virol. 86(9):4734-42. doi: 10.1128/JVI.06666-11. PMID: 22357274
8. Porter K, Tang SL, Chen CP, Chiang PW, Hong MJ, Dyall-Smith M (2013) PH1: an archaeovirus of *Haloarcula hispanica* related to SH1 and HHIV-2. Archaea. 2013:456318. doi: 10.1155/2013/456318. PMID: 23585730