

The International Committee on Taxonomy of Viruses

Taxonomy Proposal Form, 2025

**Part 1a: Details of taxonomy proposals**

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| **Title:**  | Create a new genus (*Tabiovirus*) with eight species in the Class *Caudoviricetes* |
| **Code assigned:**  | 2025.075B.Ac.v3.Tabiovirus\_1ng\_8ns |

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| **Author(s), affiliation and email address(es):**  |
| **Given name (+middle initial(s))** | **Surname** | **Affiliation**  | **Email address**  | **Corr. author(s)**  |
| Andrew M. | Kropinski | Department of Pathobiology, The Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada | Phage.Canada@gmail.com | x |
| Cristina | Moraru | Carl von Ossietzky Universität Oldenburg, Germany  | liliana.cristina.moraru@uol.de  |  |

**Part 1b: Taxonomy Proposal Submission**

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| **ICTV Subcommittee:**  |
| Animal DNA Viruses and Retroviruses |  | Bacterial viruses | **x** |
| xAnimal minus-strand and dsRNA viruses |  | Fungal and protist viruses |  |
| Animal positive-strand RNA viruses |  | Plant viruses |  |
| Archaeal viruses |  | General - |  |

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| **List the ICTV Study Group(s) that have seen or have been involved in creating this proposal:** <https://ictv.global/sc> |
| Caudoviricetes Study Group |

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| **Optional – complete only if formally voted on by an ICTV Study Group:**  |
| **Study Group** | **Number of members** |
| **Votes in support** | **Votes against** | **No vote** |
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| **Submission date:** |  15/06/2025 |

**Part 1c: Feedback from ICTV Executive Committee (EC) meeting**

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| **Executive Committee Meeting Decision code:** | **X** |
| A – Accept |  |
| Ac – Accept subject to revision by relevant subcommittee chair. No further vote required | **x** |
| U – Accept without revision but with re-evaluation and email vote by the EC |  |
| Uc – Accept subject to revision and re-evaluation and email vote by the EC |  |
| Ud – Deferred to the next EC meeting, with an invitation to revise based on EC comments |  |
| J - Reject |  |
| W - Withdrawn |  |

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| **Comments from the Executive Committee:** |
| Please improve the abstract quality. |

**Part 1d: Revised Taxonomy Proposal Submission**

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| **Response of proposer:**  |
| The text of the abstract has been amended. |

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| **Revision date:** | 01/09/2025 |

<https://ictv.global/taxonomy/templates>

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| **Taxonomic changes proposed:**  |
| Establish new taxon | **x** | Split taxon |  |
| Abolish taxon |  | Merge taxon |  |
| Move taxon |  | Promote taxon |  |
| Rename taxon |  | Demote taxon |  |
| Move and rename |  |

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| **Etymology (origin) of proposed taxonomic names:**  |
| **Taxon name**  | **Etymology of the term** |
| *Tabiovirus*  | The name is derived from Xathomonas phage Tabio  |
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| **Permission for use of names derived from a living person:**  |
| **Taxon name** | **Full name of person from whom the name is derived** | **Attached**  |
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| **Abstract of Taxonomy Proposal:**  |
| *Taxonomic rank(s) affected*:Genus, species *Description of current taxonomy*:The bacterial viruses described in this proposal are currently unclassified*Proposed* *taxonomic change(s):* To create one new genus *Tabiovirus* with eight species of *Xanthomonas* phages*Justification*: Based on analysis with ViPTree and VIRIDIC, we propose the creation of one new genus, *Tabiovirus* and eight new species of *Xanthomonas* phages.  |

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| * **Text of Taxonomy proposal:**
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| *Taxonomic rank(s) affected*:Realm *Duplodnaviria*, kingdom *Heunggongvirae*, phylum *Uroviricota*, class *Caudoviricetes* *Description of current taxonomy*:The bacterial viruses described in this proposal are currently unclassified*Proposed* *taxonomic change(s):* To create one new genus *Tabiovirus* with eight species of *Xanthomonas* phages*Demarcation criteria:* Genus demarcation criteria: An intergenomic similarity cut-off of 70%, a combination of average nucleotide identity and alignment fraction is used to determine genera demarcation. Members of the same genus have >70% intergenomic similarity and cluster tightly in marker gene phylogenies. Species demarcation criteria: A demarcation value of 95% intergenomic similarity was used to define different species according to intergenomic similarity. Members of the same species have >95% intergenomic similarity [8].*Justification*: Based on analysis with ViPTree and VIRIDIC, we propose the creation of one new genus, *Tabiovirus* and eight new species of *Xanthomonas* phages |

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| **References:**  |
| 1. Sayers EW, Beck J, Bolton EE, Bourexis D, Brister JR, Canese K, Comeau DC, Funk K, Kim S, Klimke W, Marchler-Bauer A, Landrum M, Lathrop S, Lu Z, Madden TL, O'Leary N, Phan L, Rangwala SH, Schneider VA, Skripchenko Y, Wang J, Ye J, Trawick BW, Pruitt KD, Sherry ST. Database resources of the National Center for Biotechnology Information. Nucleic Acids Res. 2021 Jan 8;49(D1):D10-D17. doi: 10.1093/nar/gkaa892. PMID: 330958702. Moraru C, Varsani A, Kropinski AM. VIRIDIC-A Novel Tool to Calculate the Intergenomic Similarities of Prokaryote-Infecting Viruses. Viruses. 2020 Nov 6;12(11):1268. doi: 10.3390/v12111268. PMID: 33172115; PMCID: PMC7694805. http://kronos.icbm.uni-oldenburg.de/viridic/ 3. Turner D, Kropinski AM, Adriaenssens EM. A Roadmap for Genome-Based Phage Taxonomy. Viruses. 2021 Mar 18;13(3):506. doi: 10.3390/v13030506. PMID: 33803862; PMCID: PMC8003253.4. Nishimura Y, Yoshida T, Kuronishi M, Uehara H, Ogata H, Goto S. ViPTree: the viral proteomic tree server. Bioinformatics. 2017; 33(15):2379-2380. doi:10.1093/bioinformatics/btx157. PubMed PMID: 28379287. https://www.genome.jp/viptree/ 5. Rohwer F, Edwards R. The Phage Proteomic Tree: a genome-based taxonomy for phage. J Bacteriol. 2002 Aug;184(16):4529-35. PubMed PMID: 121424236. Lemoine F, Correia D, Lefort V, Doppelt-Azeroual O, Mareuil F, Cohen-Boulakia S, Gascuel O. NGPhylogeny.fr: new generation phylogenetic services for non-specialists. Nucleic Acids Res. 2019 Jul 2;47(W1):W260-W265. doi: 10.1093/nar/gkz303. PMID: 31028399; PMCID: PMC6602494.7. Letunic I, Bork P. Interactive Tree Of Life (iTOL) v5: an online tool for phylogenetic tree display and annotation. Nucleic Acids Res. 2021 Jul 2;49(W1):W293-W296. doi: 10.1093/nar/gkab301. PMID: 33885785; PMCID: PMC8265157.  |

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| **Accompanying files:**  |
| **Filename** | **Description of contents** |
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| **Tables, Figures:**  |

**Table 1.** Characteristics of the phages described in the proposal

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| **Phage name** | **Host** | **Morphotype** | **Lifestyle** | **Accession No.** | **Genome size** | **No. proteins** | **No. tRNA** |
| Xanthomonas phage JUN5 | Not listed | unknown | unknown | OK913679.1 | 42912 bp | 57 | 0 |
| Xanthomonas phage Tenjo | *Xanthomonas albilineans* | unknown | unknown | LR743531.1 | 43850 bp | 57 | 0 |
| Xanthomonas phage Tabio | *Xanthomonas albilineans* | unknown | unknown | LR743528.1 | 43458 bp | 56 | 0 |
| Xanthomonas phage 10KY502B | *Xanthomonas citri* | unknown | unknown | OQ622092.1 | 43262 bp | 42(\*) | 1 |
| Xanthomonas phage MET23-P3 | unknown | unknown | unknown | OK913680.1 | 43010 bp | 55 | 0 |
| Xanthomonas phage Olaya | *Xanthomonas albilineans* CFBP2523 | unknown | unknown | MW802488.1 | 43722 bp | 55 | 0 |
| Xanthomonas citri phage Cp2 | *Xanthomonas citri* | unknown | unknown | AB720064.1 | 42963 bp | 40(\*) | 0 |
| Xanthomonas phage SAC | *Xanthomonas citri* | unknown | unknown | PV012638.1 | 43900 bp | 55 | 0 |

**(\*) underannotated**

**Specific references:**

Ahmad AA, Ogawa M, Kawasaki T, Fujie M, Yamada T. Characterization of bacteriophages Cp1 and Cp2, the strain-typing agents for *Xanthomonas axonopodis* pv. citri. Appl Environ Microbiol. 2014 Jan;80(1):77-85. doi: 10.1128/AEM.02310-13. Epub 2013 Oct 11. PMID: 24123743; PMCID: PMC3911001.

**Figure 1.** VIRIDIC heat map (Virus Intergenomic Distance Calculator; VIRIDIC (Virus Intergenomic Distance Calculator; [3]; http://rhea.icbm.uni-oldenburg.de/VIRIDIC/) heatmap for this group of phages. It computes pairwise intergenomic distances/similarities amongst phage genomes. Data values which are bordered in black correspond to strains. Abbreviations: Xant = *Xanthomonas*; Xyle = *Xylella*; phg = phage.

**Figure 2:** ViPTree analysis (https://www.genome.jp/viptree/; [4]) is based upon Rohwer and Edwards (2002) Phage Proteomic Tree [5]. The phages of interest are indicated with **red stars**.