This Word module should be used for all taxonomic proposals.

Please complete **Part 1** and:

either **Part 3** for proposals to create new taxa or change existing taxa

or **Part 2** for proposals of a general nature.

Submit the completed Word module, together with the accompanying Excel module named in Part 3, to the appropriate ICTV Subcommittee Chair.

For guidance, see the notes written in blue, below, and the help notes in file Taxonomic\_Proposals\_Help\_2018.

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Code assigned:** | ***2018.078B*** | | (to be completed by ICTV officers) |
| **Short title:** (e.g. “6 new species in the genus *Zetavirus”*)  **To create one (1) new genus, *Krylovvirus*, containing one (1) species in the family *Podoviridae*** | | | |
|  | | | |
| **Author(s):** | | | |
| Andrew M. Kropinski, University of Guelph, Canada  Evelien M. Adriaenssens, University of Liverpool, UK  Leonid Kulakov, Queen’s University Belfast, UK | | | |
| **Corresponding author with e-mail address:** | | | |
| Andrew M. Kropinski Phage.Canada@gmail.com | | | |
| **List the ICTV study group(s) that have seen this proposal:** | | | |
| A list of study groups and contacts is provided at <http://www.ictvonline.org/subcommittees.asp> . If in doubt, contact the appropriate subcommittee chair (there are six virus subcommittees: animal DNA and retroviruses, animal ssRNA-, animal ssRNA+, fungal and protist, plant, bacterial and archaeal) | | **Bacterial and Archaeal Viruses Subcommittee** | |
| **ICTV Study Group comments (if any) and response of the proposer:** | | | |
|  | | | |
|  | | | |
| Date first submitted to ICTV: | | | May 2018 |
| Date of this revision (if different to above): | | |  |

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

**Part 2:** **NON-STANDARD**

Template for any proposal regarding ICTV procedures, rules or policy, not involving the creation of new taxonomy.

| **Text of proposal:** |
| --- |
|  |

**Part 3:** **PROPOSED TAXONOMY**

|  |
| --- |
| **Name of accompanying Excel module: 2018.078B.N.v1Krylovvirus** |

The taxonomic changes you are proposing should be presented on an accompanying Excel module, 2017\_TP\_Template\_Excel\_module. Please enter the file name of the completed module in this box.

**Supporting material:**

| additional material in support of this proposal |
| --- |
| Please explain the reasons for the taxonomic changes you are proposing and provide evidence to support them. The following information should be provided, where relevant:   * **Species demarcation criteria**: Explain how new species differ from others in the genus and demonstrate that these differences meet the criteria previously established for demarcating between species. If no criteriahave previously been established, and if there will now be more than one species in the genus, please state the demarcation criteria you are proposing. * **Higher taxa**:   + There is no formal requirement to state demarcation criteria when proposing new genera or other higher taxa. However, a similar concept should apply in pursuit of a rational and consistent virus taxonomy.   + Please indicate the **origin of names** assigned to new taxa at genus level and above.   + For each new genus a **type species** must be designated to represent it. Please explain your choice. * **Supporting evidence**: The use of Figures and Tables is strongly recommended (note that copying from publications will require permission from the copyright holder). For phylogenetic analysis, try to provide a tree where branch length is related to genetic distance. |

**Species demarcation criteria** We have chosen 95% DNA sequence identity as the criterion for demarcation of species in this new genus. Each of the proposed species differs from the others with more than 5% at the DNA level as confirmed with the BLASTN algorithm.

**Source of the name of this taxon:** This genus is named in honour of the Russian/Soviet scientist Victor N. Krylov (b. 1938; Professor and Head of Laboratory for Genetics of Bacteriophages, I.I. Mechnikov Research Institute for Vaccines and Sera, Moscow, Russia) who isolated this, and many other Pseudomonas phages.

**History:** Lytic phage tf was isolated from soil adjacent to a sycamore tree in Midway Plaisance park in Chicago in 1978 by Victor N. Krylov using Pseudomonas putida as the host bacterium. It was first described in Russian language publication in 1981 [1]. “The overall genomic architecture of the tf phage is similar to that of the previously described Pseudomonas aeruginosa phages PaP3, and LUZ24” [1] but recognizing that it bears only limited DNA sequence relatedness to Pseudomonas phage LUZ24, we have decided not to include it in the *Luz24virus* genus. “Two distinguishing features not reported for other members of the group were found in the tf genome. Firstly, a unique end structure--a blunt right end and a 4-nucleotide 3'-protruding left end--was observed. Secondly, 14 localized single-chain interruptions were found in the top strand of the tf DNA. All nicks were mapped within a consensus sequence 5'-TACT/RTGMC-3'.” [2] The ends both contain 186 bp direct repeats.

**GenBank Summary:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Phage name | RefSeq No. | INSDC | Size (Kb) | GC% | Protein | tRNA |
| tf | NC\_017971.2 | HE611333.2 | 46.27 | 53.2 | 72 | 0 |

**BLASTN homologs:** A neighbour joining tree was constructed on the basis of the BLASTN analysis at NCBI, indicating a peripheral relationship to several unclassified phages. The closest relative based upon BLASTN analysis is Pseudomonas phage NV1. We do not intend to create a higher taxon at this time.

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**Phylogeny:** The phylogenetic tree was constructed, using phylogeny.fr, using the major capsid protein homologs of phage tf and related phages.



| **References:** |
| --- |
| 1: Krylov VN, Kulakov LA, Kirsanov NB, Khrenova EA. Genetika. 1981;17(2):239-45.  [Isolation and analysis of phage-resistant Pseudomonas putida mutants using new bacteriophages]. [Article in Russian]  2: Glukhov AS, Krutilina AI, Shlyapnikov MG, Severinov K, Lavysh D, Kochetkov VV,  McGrath JW, de Leeuwe C, Shaburova OV, Krylov VN, Akulenko NV, Kulakov LA.  Genomic analysis of Pseudomonas putida phage tf with localized single-strand DNA  interruptions. PLoS One. 2012;7(12):e51163. |