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:** | ***2018.058B*** | | (to be completed by ICTV officers) |
| **Short title:** (e.g. “6 new species in the genus *Zetavirus”*)  **To create one (1) new genus, *Vividuovirus*, containing three (3) species in the family *Siphoviridae*** | | | |
|  | | | |
| **Author(s):** | | | |
| Andrew M. Kropinski, University of Guelph  Evelien M. Adriaenssens, University of Liverpool | | | |
| **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): | | |  |

|  |
| --- |
| **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: 2018.058B.N.v1.Vividuovirus** |

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:** It is derived from the name of the first isolated member, Gordonia phage Vivi2

**History:** Lytic phage Vivi2 was isolated in 2015 by Michael E. Bortz (Pittsburgh, PA, USA) as part of the Science Education Alliance-Phage Hunters Advancing Genomics and Evolutionary Science program using Gordonia terrae 3612 as the host bacterium. The genome circularly permuted. These phages belong to subcluster DE1 in The Actinobacteriophage Database [1].

**GenBank Summary:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phage name | RefSeq No. | INSDC | Size (Kb) | GC% | Protein | tRNA | Overall DNA sequence identity (\*) | % Common proteins (\*\*) |
| Vivi2 | NC\_031239 | KU963250 | 59.34 | 67.1 | 89 | 0 | 100 | 100 |
| Brandonk123 |  | MG812487 | 58.84 | 67.3 | 89 | 0 | 84 | 86.5 |
| Lennon |  | MF919514 | 60.24 | 67.4 | 85 | 0 | 84 | 86.5 |

(\*) determined using NCBI BLASTN; (\*\*) determined using CoreGenes 3.5

**BLASTN homologs:** See above. Its relationship to other Gordonia phages is illustrated in this neighbour joining tree generated using NCBI BLASTN.

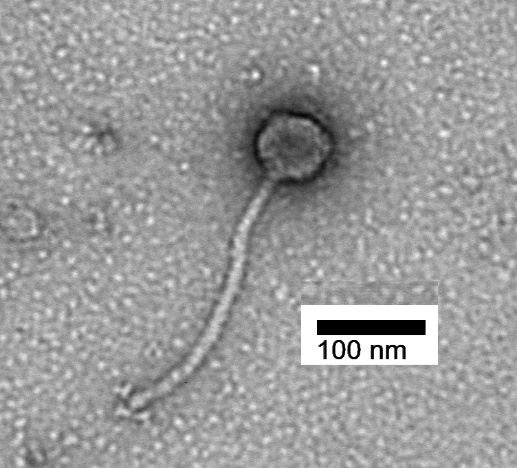
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**Electron micrograph:** Electron micrograph of negatively stained Gordonia phage Viv2 (http://phagesdb.org/phages/Vivi2/). Limited permission was granted by The

Actinobacteriophages Database, funded by the Howard Hughes Medical Institute, to use these

electron micrographs for this taxonomy proposal; it cannot be reused without permission of The

Actinobacteriophages Database.

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**Phylogeny:** The phylogenetic tree was constructed, using phylogeny.fr, using the major capsid protein homologs of Vivi2 and related phages.



| **References:** |
| --- |
| 1: Pope WH, Anderson KC, Arora C, Bortz ME, Burnet G, Conover DH, D'Incau GM,  Ghobrial JA, Jonas AL, Migdal EJ, Rote NL, German BA, McDonnell JE, Mezghani N,  Schafer CE, Thompson PK, Ulbrich MC, Yu VJ, Furbee EC, Grubb SR, Warner MH,  Montgomery MT, Garlena RA, Russell DA, Jacobs-Sera D, Hatfull GF. Genome  Sequences of Gordonia terrae Bacteriophages Phinally and Vivi2. Genome Announc.  2016 Aug 18;4(4). pii: e00599-16. |