

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

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| **Code assigned:** | *2022.082B* |  |
| **Short title:** Create a new genus (*Skulduggeryvirus*) with a single species (*Caudoviricetes*) | | |
|  | | |

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

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|  |  |
| Turner D, Moraru C, Kropinski AM | Dann2.Turner@uwe.ac.uk; liliana.cristina.moraru@uol.de; Phage.Canada@gmail.com |

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

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| --- |
| University of the West of England, Bristol, UK [DT]  Carl von Ossietzky Universität Oldenburg, Germany [CM]  University of Guelph, Canada [AMK] |

**Corresponding author**

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| Andrew M. Kropinski |

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

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| Bacterial Viruses Subcommittee, Caudoviricetes Study Group |

**ICTV Study Group comments and response of proposer**

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**ICTV Study Group votes on proposal**

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| --- | --- | --- | --- |
| **Study Group** | **Number of members** | | |
| **Votes support** | **Votes against** | **No vote** |
|  |  |  |  |
|  |  |  |  |

**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)** |
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**Submission dates**

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| --- | --- |
| Date first submitted to SC Chair | May 2022 |
| Date of this revision (if different to above) | September 2022 |

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

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| ICTV-EC: Annotations of figures are incorrect and identify more phages than the members of the proposed genus.  Proposer: Corrected. |

**Part 2:** **NON-TAXONOMIC PROPOSAL**

**Text of proposal**

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

**Name of accompanying Excel module**

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| 2022.082B.A.v1.Skulduggeryvirus\_ng.xlsx |

**Abstract**

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| We have classified Pseudomonas podovirus Skulduggery to a new genus, *Skulduggeryvirus*. |

**Text of proposal**

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| |  | | --- | | **Species demarcation criteria:** Two phages are assigned to the same species if their genomes are more than 95% identical over their genome length for isolates.  These values can be calculated by a number of tools, such as BLASTn [1] – usually calculated using intergenomic distance calculator VIRIDIC [2].  **Genus demarcation criteria:** In search for criteria that create cohesive and distinct genera that are reproducible and monophyletic, the Bacterial Viruses Subcommittee has established 70% nucleotide identity of the genome length as the cut-off for genera. Genus-level groupings should always be monophyletic in the signature genes, as tested with a phylogenetic tree. [8] | |

**Supporting evidence**

**Origin of the name of this taxon:** This taxon is named after Pseudomonas phage Skulduggery

**Historical aspects:** This lytic podophage was isolated against Pseudomonas fluorescens SBW25 from 38 Maori Hut Road, Red Beach 0932, New Zealand compost .

**Electron micrograph:** N/A

**Genome summary:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Phage name | INSDC | Size (Kb) | GC% | Protein | Overall % DNA sequence identity (\*) | Overall % homologous proteins (\*\*) |
| Pseudomonas phage skulduggery | [MF042361.1](about:blank) | 62.98 | 60.7 | [72](about:blank#!/proteins/63634/466255|Pseudomonas phage Skulduggery/viral segment/) | 100 | 100 |

**(\*) determined using BLASTn [1] or VIRIDIC [2]**

**(\*\*) determined using CoreGenes 3.5 [5]**

**VIRIDIC heat map:** VIRIDIC (Virus Intergenomic Distance Calculator; VIRIDIC (Virus Intergenomic Distance Calculator; [2]; http://rhea.icbm.uni-oldenburg.de/VIRIDIC/) computes pairwise intergenomic distances/similarities amongst phage genomes. The black box delineates strains. The only member of the *Skulduggeryvirus* is indicated with a **blue rectangle**.



**Phylogeny:** The phylogenetic tree was constructed using the TerL proteins from Skulduggery and related phages with phylogeny.fr in “one click” mode [6]. The usual bootstrapping procedure is replaced by a new confidence index that is much faster to compute. See Anisimova M., Gascuel O. Approximate likelihood ratio test for branches: A fast, accurate and powerful alternative [7] for details. The only member of the *Skulduggeryvirus* is indicated with a **blue rectangle**.

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