

The International Committee on Taxonomy of Viruses

Taxonomy Proposal Form, 2025

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

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| **Title:** | Create 32 new species in the genus *Friunavirus* (class *Caudoviricetes,* order *Autographivirales,* family *Autoscriptoviridae,* subfamily *Beijerinckvirinae*) |
| **Code assigned:** | 2025.085B.A.v2.Friunavirus\_32ns | |

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| **Author(s), affiliation and email address(es):** | | | | |
| **Given name (+middle initial(s))** | **Surname** | **Affiliation** | **Email address** | **Corresponding author(s)** |
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**Part 1b: Taxonomy Proposal Submission**

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| **ICTV Subcommittee:** | | | |
| Animal DNA Viruses and Retroviruses |  | Bacterial viruses | X |
| Animal 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:** |
| *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:** | 20/06/2025 |

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

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| **Executive Committee Meeting Decision code:** | **X** |
| A – Accept | **x** |
| Ac – Accept subject to revision by relevant subcommittee chair. No further vote required |  |
| 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| W - Withdrawn |  |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:** |
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**Part 1d: Revised Taxonomy Proposal Submission**

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| **Response of proposer:** |
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| **Revision date:** |  |

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

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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** |
| *Friunavirus AB3* | species name derived from the phage name in the GenBank database – Acinetobacter phage AB3 |
| *Friunavirus 1137KEN02* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_Ab\_1137\_KEN\_02 |
| *Friunavirus 1137KEN05* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_Ab\_1137\_KEN\_05 |
| *Friunavirus 1137KEN03* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_Ab\_1137\_KEN\_03 |
| *Friunavirus 5899STDY8049184* | species name derived from the phage name in the GenBank database – Acinetobacter phage MD-2021b strain 5899STDY8049184 |
| *Friunavirus NC12* | species name derived from the phage name in the GenBank database – Acinetobacter phage AB\_NC12 |
| *Friunavirus SWHAb1* | species name derived from the phage name in the GenBank database – Acinetobacter phage SWH-Ab-1 |
| *Friunavirus 5899STDY8049183* | species name derived from the phage name in the GenBank database – Acinetobacter phage MD-2021b strain 5899STDY8049183 |
| *Friunavirus TCUAN2* | species name derived from the phage name in the GenBank database – Acinetobacter phage TCUAN2 |
| *Friunavirus 5899STDY8049180* | species name derived from the phage name in the GenBank database – Acinetobacter phage MD-2021b strain 5899STDY8049180 |
| *Friunavirus 1137KEN06* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_Ab\_1137\_KEN\_06 |
| *Friunavirus Margaret* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_AbaP\_Margaret |
| *Friunavirus phiAB440* | species name derived from the phage name in the GenBank database – Acinetobacter phage phiAB440 |
| *Friunavirus Tama* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_AbaP\_Tama |
| *Friunavirus Fanak* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_AbaP\_Fanak |
| *Friunavirus Bhz16* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_AbaS-Bhz16 |
| *Friunavirus A43Y* | species name derived from the phage name in the GenBank database – Acinetobacter phage A43Y |
| *Friunavirus Acba19* | species name derived from the phage name in the GenBank database – Acinetobacter phage Acba\_19 |
| *Friunavirus APK44* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_AbaP\_APK44 |
| *Friunavirus ZC2* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_Aba\_ZC2 |
| *Friunavirus 164KEN02* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_Ab\_164\_KEN\_02 |
| *Friunavirus 5899STDY8049177* | species name derived from the phage name in the GenBank database – Acinetobacter phage MD-2021b strain 5899STDY8049177 |
| *Friunavirus 5899STDY8049181* | species name derived from the phage name in the GenBank database – Acinetobacter phage MD-2021b strain 5899STDY8049181 |
| *Friunavirus Fishpie* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_AbaP\_Fishpie |
| *Friunavirus EAB11* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_AbaA\_EAB11 |
| *Friunavirus 02KEN01* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_Ab\_02\_KEN\_01 |
| *Friunavirus ABW132* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_AbaP\_ABW132 |
| *Friunavirus A31Y* | species name derived from the phage name in the GenBank database – Acinetobacter phage A31Y |
| *Friunavirus ABW311* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_AbaP\_ABW311 |
| *Friunavirus W8* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_AbaP\_W8 |
| *Friunavirus Ab11* | species name derived from the phage name in the GenBank database – Acinetobacter phage Ab11 |
| *Friunavirus AbaSI4* | species name derived from the phage name in the GenBank database – Acinetobacter phage vB\_AbaSI\_4 |

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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*:  Realm *Duplodnaviria*, kingdom *Heunggongvirae*, phylum *Uroviricota*, class *Caudoviricetes,* order *Autographivirales,* family *Autoscriptoviridae,* subfamily *Beijerinckvirinae.*  *Description of current taxonomy*:  The subfamily *Beijerinckvirinae* comprises four genera (i.e., *Aristophanesvirus, Daemvirus, Friunavirus, Pettyvirus*)and68 species. Currently, the *Friunavirus* genus includes 65 species.  *Proposed* *taxonomic change(s):*  We performed a genomic analysis of phages deposited in the NCBI database. We propose to create 32 new species in the genus *Friunavirus*.  *Justification*:  Based on DNA and protein similarity, the 32 proposed new species are coherent and together with the 65 known species can be classified in the genus *Friunavirus*. |

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| **Text of Taxonomy proposal:** |
| *Taxonomic rank(s) affected*:  Realm *Duplodnaviria*, kingdom *Heunggongvirae*, phylum *Uroviricota*, class *Caudoviricetes,* order *Autographivirales,* family *Autoscriptoviridae,* subfamily *Beijerinckvirinae.*  *Description of current taxonomy*:  The subfamily *Beijerinckvirinae* comprises four genera (i.e., *Aristophanesvirus, Daemvirus, Friunavirus, Pettyvirus*)and68 species. Currently, the *Friunavirus* genus includes 65 species.  *Proposed* *taxonomic change(s)*:  We performed a genomic analysis of phages deposited in the NCBI database. We propose to create 32 new species in the genus *Friunavirus*.  *Demarcation criteria:*  **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 several tools, such as BLASTn [1] – usually calculated using the 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 [3].  *Justification*:  Based on DNA and protein similarity, the 32 proposed new species are coherent and together with the 65 known species can be classified in the genus *Friunavirus*. |

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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, 49(D1):D10-D17. 2. Moraru C, Varsani A, Kropinski AM. VIRIDIC - a novel tool to calculate the intergenomic similarities of prokaryote-infecting viruses. *Viruses* 2020, 12(11):1268. 3. Turner D, Kropinski AM, Adriaenssens EM. A roadmap for genome-based phage taxonomy. *Viruses* 2021, 13(3):506. 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. 5. Rohwer F, Edwards R. The Phage Proteomic Tree: a genome-based taxonomy for phage. *J. Bacteriol.* 2002, 184(16):4529-35. 6. Turner D, Reynolds D, Seto D, Mahadevan P. CoreGenes3.5: a webserver for the determination of core genes from sets of viral and small bacterial genomes. *BMC Res. Notes.* 2013, 6:140. |

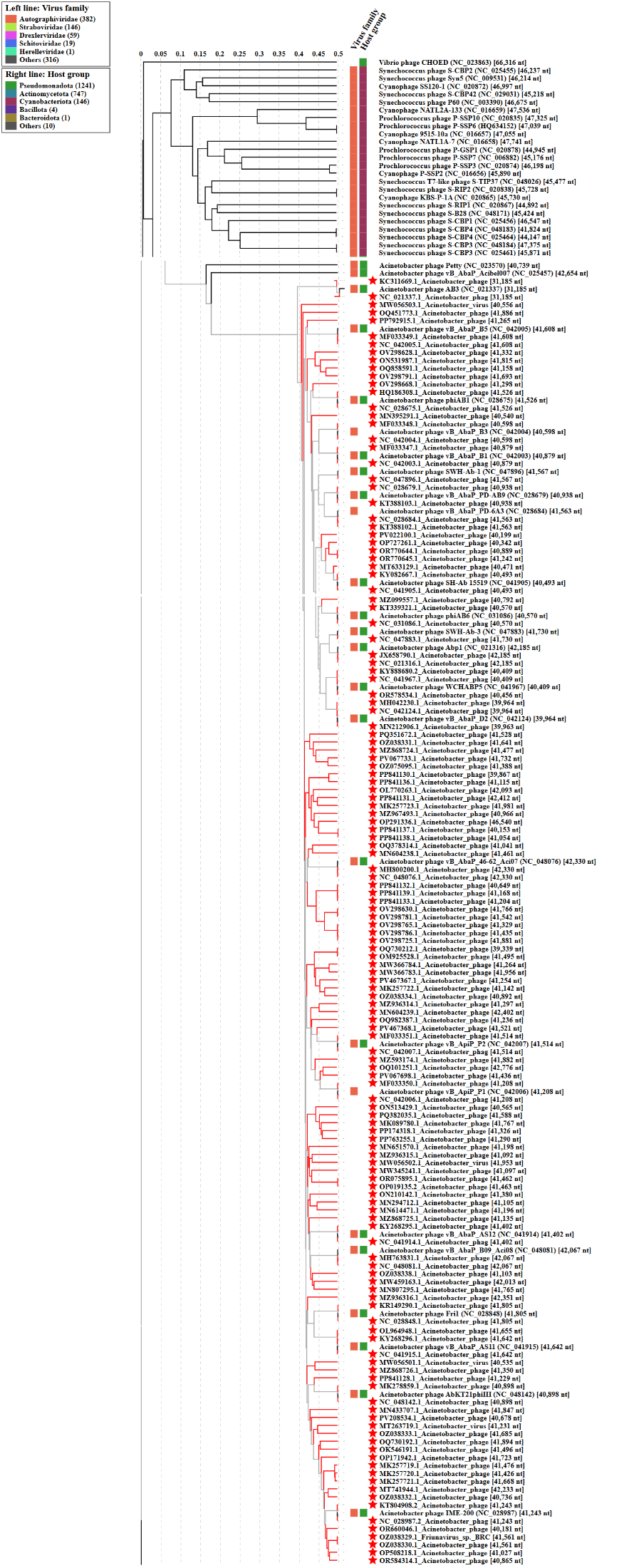
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| **Accompanying files:** | |
| **Filename** | **Description of contents** |
| Friunavirus\_32\_ns.xlsx | To present the proposed taxonomic changes as a comparison of new taxonomic structures. |

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| **Tables, Figures:** |

**Figure 1. VIRIDIC heat map:** VIRIDIC (Virus Intergenomic Distance Calculator [2]; http://rhea.icbm.uni-oldenburg.de/VIRIDIC/) computes pairwise intergenomic distances/similarities amongst phage genomes. Phages belonging to the same species (nucleotide similarity above 95%) are marked with a **red** frame.



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



\* The *Autographiviridae* family shown in **Figure 2** (automatically labeled by the software) is outdated. In 2025, the *Autographiviridae* family was elevated to the rank of order and renamed *Autographivirales*.

**Genome summary:**

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| Phage name | RefSeq No. | INSDC | Size (bp) | GC% | Protein | Overall % DNA sequence identity (\*) | Overall % homologous proteins (\*\*) |
| **Acinetobacter phage vB\_AbaP\_B1 (*Friunavirus B1*; reference genome)** | **NC\_042003.1** | **NC\_042003** | **40,879** | **39.1** | **51** | **100.0** | **100.00** |
| Acinetobacter phage AB3 |  | KC311669 | 31,185 | 39.2 | 29 | 71.5 | 49.02 |
| Acinetobacter phage vB\_Ab\_1137\_KEN\_02 |  | PP841130 | 39,867 | 39.4 | 60 | 79.3 | 76.47 |
| Acinetobacter phage vB\_Ab\_1137\_KEN\_05 |  | PP841136 | 41,115 | 39.3 | 66 | 81.9 | 84.31 |
| Acinetobacter phage vB\_Ab\_1137\_KEN\_03 |  | PP841131 | 42,412 | 39.3 | 64 | 81.1 | 84.31 |
| Acinetobacter phage MD-2021b strain 5899STDY8049184 |  | OV298668 | 41,298 | 39.2 | 49 | 83.6 | 84.31 |
| Acinetobacter phage AB\_NC12 |  | PV022100 | 40,199 | 39.5 | 49 | 85.8 | 86.27 |
| Acinetobacter phage SWH-Ab-1 |  | NC\_047896 | 41,567 | 39.4 | 48 | 85.4 | 84.31 |
| Acinetobacter phage MD-2021b strain 5899STDY8049183 |  | OV298628 | 41,332 | 39.1 | 47 | 80.8 | 78.43 |
| Acinetobacter phage TCUAN2 |  | ON531987 | 41,815 | 39.1 | 68 | 84.4 | 84.31 |
| Acinetobacter phage MD-2021b strain 5899STDY8049180 |  | OV298791 | 41,693 | 39.4 | 48 | 84.3 | 84.31 |
| Acinetobacter phage vB\_Ab\_1137\_KEN\_06 |  | PP841137 | 40,153 | 39.2 | 55 | 81.1 | 82.35 |
| Acinetobacter phage vB\_AbaP\_Margaret |  | OZ038333 | 41,685 | 39.2 | 62 | 84.1 | 86.27 |
| Acinetobacter phage phiAB440 |  | PP792915 | 41,265 | 39.0 | 50 | 83.4 | 84.31 |
| Acinetobacter phage vB\_AbaP\_Tama |  | OZ038331 | 41,641 | 39.5 | 66 | 85.7 | 86.27 |
| Acinetobacter phage vB\_AbaP\_Fanak |  | OZ075095 | 41,388 | 39.2 | 59 | 82.8 | 82.35 |
| Acinetobacter phage vB\_AbaS-Bhz16 |  | PV067733 | 41,732 | 39.3 | 60 | 81.8 | 82.35 |
| Acinetobacter phage A43Y |  | PV467368 | 41,521 | 39.2 | 46 | 79.3 | 72.55 |
| Acinetobacter phage Acba\_19 |  | PV067698 | 41,436 | 39.1 | 47 | 81.4 | 78.43 |
| Acinetobacter phage vB\_AbaP\_APK44 |  | MN604238 | 41,461 | 39.1 | 50 | 83.1 | 88.24 |
| Acinetobacter phage vB\_Aba\_ZC2 |  | PQ351672 | 41,528 | 39.1 | 55 | 89.5 | 94.12 |
| Acinetobacter phage vB\_Ab\_164\_KEN\_02 |  | PP841133 | 41,204 | 39.2 | 58 | 81.7 | 82.35 |
| Acinetobacter phage MD-2021b strain 5899STDY8049177 |  | OV298630 | 41,766 | 39.3 | 49 | 82.1 | 84.31 |
| Acinetobacter phage MD-2021b strain 5899STDY8049181 |  | OV298725 | 41,881 | 39.1 | 48 | 81.7 | 84.31 |
| Acinetobacter phage vB\_AbaP\_Fishpie |  | OZ038332 | 40,736 | 39.4 | 57 | 84.1 | 88.24 |
| Acinetobacter phage vB\_AbaA\_EAB11 |  | PV208534 | 40,678 | 39.3 | 38 | 82.8 | 52.94 |
| Acinetobacter phage vB\_Ab\_02\_KEN\_01 |  | PP841128 | 41,229 | 39.3 | 60 | 82.3 | 90.20 |
| Acinetobacter phage vB\_AbaP\_ABW132 |  | OZ038338 | 41,103 | 39.1 | 63 | 80.1 | 82.35 |
| Acinetobacter phage A31Y |  | PV467367 | 41,254 | 39.3 | 49 | 83.5 | 80.39 |
| Acinetobacter phage vB\_AbaP\_ABW311 |  | OZ038334 | 40,892 | 39.5 | 58 | 82.3 | 86.27 |
| Acinetobacter phage vB\_AbaP\_W8 |  | PP174318 | 41,326 | 39.2 | 48 | 80.9 | 84.31 |
| Acinetobacter phage Ab11 |  | PP763255 | 41,290 | 39.3 | 58 | 81.2 | 84.31 |
| Acinetobacter phage vB\_AbaSI\_4 |  | PQ382035 | 41,588 | 39.2 | 51 | 80.8 | 84.31 |

(\*) determined using VIRIDIC [2]

(\*\*) determined using CoreGenes 3.5 [6]