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Recent changes to virus taxonomy ratified by the International Committee on Taxonomy of Viruses (2022)

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Abstract

This article reports the changes to virus taxonomy approved and ratified by the International Committee on Taxonomy of Viruses (ICTV) in March 2022. The entire ICTV was invited to vote on 174 taxonomic proposals approved by the ICTV Executive Committee at its annual meeting in July 2021. All proposals were ratified by an absolute majority of the ICTV members. Of note, the Study Groups have started to implement the new rule for uniform virus species naming that became effective in 2021 and mandates the binomial ‘Genus_name species_epithet’ format with or without Latinization. As a result of this ratification, the names of 6,481 virus species (more than 60 percent of all species names currently recognized by ICTV) now follow this format.

Introduction

Changes to virus taxonomy (the universal scheme of virus classification of the International Committee on Taxonomy of Viruses [ICTV]) take place annually and are the result of a multi-stage process. In accordance with the ICTV Statutes (<https://ictv.global/statutes>), taxonomic proposals (TaxoProps) submitted to the ICTV Executive Committee (EC) undergo a review process that involves input from the ICTV Study Groups (SGs) and Subcommittees (SCs), other interested virologists, and the EC. After final approval by the EC, proposals are presented for ratification to the full ICTV membership by posting on the ICTV website (<https://ictv.global/>) followed by an electronic vote.

The latest set of proposals approved by the EC was made available on the ICTV website in early 2022 (see <https://ictv.global/proposal/MSL37/> for all proposals combined into a single zip file, and use the links provided in the References to this publication to access individual proposals). A list of proposals was then emailed on 6th February 2022 to the 184 members of ICTV, namely the EC Members, Life Members, ICTV SC Members including the SG chairs and the Bioinformatics Expert Group members, and ICTV National Representatives. Members were then requested to vote on whether to ratify the taxonomic proposals. Voting closed on 11th March 2022.

Changes to virus taxonomy ratified in 2022

All 174 proposals were ratified by ICTV members, in every case receiving an absolute majority of votes; at least 68% of eligible voters approved each proposal. A summary of the taxonomy changes enacted by ratification of the proposals is provided in Table 1; there were no proposals to change ICTV Code or ICTV Statutes this year. Each proposal is cited and listed in the References to acknowledge the authors’ efforts and to provide links to the specific proposal on the ICTV website [1–175]. These documents remain available for those who wish to see the full details of the proposals. TaxoProp 2020.002G, ratified in 2021 [175], specified a procedure for expedited correction of unintended errors that may occur during proposal writing but clearly do not reflect the intention of the proposers, as described in the submitted proposal documentation. Examples of such errors include assignment of a lower-rank taxon to an incorrect higher rank, inadvertent introduction of duplicate taxon names, or assignment of a misspelled taxon name. Since the changes ratified by ICTV take effect immediately, this mechanism was used to correct several proposals

in the current cycle. The corrections are listed in proposals 2021.097B [101], 2021.014M [129], 2021.042M [150] and 2021.043M [151].

Another important change ratified in 2021 was the adoption of a uniform binomial format for naming of virus species [176]. The ICTV SGs have been charged with conversion of all existing virus species names to the new binomial format, and two groups of authors affiliated with ICTV have recently provided guidance on designing and writing virus species' names [177]. With the ratification described here, 6,481 virus species out of 10,434 in the ICTV official Master Species List (MSL) adhere to the required binary format. The process of name conversion continues and is expected to be completed by the EC meeting planned for 2023. This system concerns only the names of virus species and does not affect the names of viruses [177].

Also of note, one proposal [107] established the family *Polydnaviriformidae*, the first high-order taxon comprising viriforms, the classifiable entities that were explicitly included in the ICTV remit in 2021. The list of all new orders and new families ratified in 2022 is provided in Table 2.

Conclusion

All proposals submitted for ratification were ratified by an absolute majority of the ICTV, and the changes are now part of official ICTV taxonomy. An up-to-date list of all approved taxa, which now includes 10,434 virus species, can be found on the ICTV website: see <https://ictv.global/msl/> for the MSL and <https://ictv.global/vmr/> for the Virus Metadata Resource (VMR) that provides an exemplar virus isolate for each species along with the Gen-Bank accession number of the isolate.

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59. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Mycoabscvirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.054B.R.Mycoabscvirus.zip>
60. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Myradeevirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.055B.R.Myradeevirus.zip>
61. Rihtman B, Millard A, Chen Y, Scanlan D, Puxty R (2021) Create one new family *Naomiviridae* including one new genus (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.056B.R.Naomiviridae.zip>
62. Turner D, Moraru C, Tolstoy I, Adriaenssens EM, Kropinski AM (2021) In the subfamily *Nclasvirinae*, abolish two genera (*Redivirus*, *Buttersvirus*), move and rename six species, rename three species and create nine new species in the single genus *Charlievirus* (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.057B.R.Nclasvirinae.zip>
63. Holtappels D, Fortuna K, Wagemans J, Lavigne R (2021) Create one new genus (*Oliverocinquevirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.058B.R.Oliverocinquevirus.zip>
64. Holtappels D, Fortuna K, Wagemans J, Lavigne R (2021) Create one new genus (*Oliverunavirus*) including one new species (*Schitoviridae*) <https://ictv.global/ictv/proposals/2021.059B.R.Oliverunavirus.zip>
65. Moraru C, Turner D, Tolstoy I, Adriaenssens EM, Kropinski AM (2021) Create one new family (*Orlajensenviridae*) including three new genera (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.060B.R.Orlajensenviridae.zip>
66. Turner D, Moraru C, Kropinski AM (2021) Create 13 new species in the genus *Pbunavirus* (*Caudoviricetes*) https://ictv.global/ictv/proposals/2021.061B.R.Pbunavirus_new_species.zip
67. Moraru C, Tolstoy I, Turner D, Adriaenssens EM, Kropinski AM (2021) Create three new genera in the subfamily *Pclasvirinae* (*Caudoviricetes*) https://ictv.global/ictv/proposals/2021.062B.R.Pclasvirinae_new_genera.zip
68. Lueder MR, Bishop-Lilly KA, Van Zyl LJ, Adriaenssens EM (2021) Create one new family (*Peduoviridae*) including 20 new genera and 21 new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.063B.R.Peduoviridae.zip>
69. Turner D, Tolstoy I, Kropinski AM (2021) Create two new genera (*Pharaohvirus*, *Refugevirus*) including four new species (*Caudoviricetes*) https://ictv.global/ictv/proposals/2021.064B.R.Pharaohvirus_Refugevirus.zip
70. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Phleivirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.065B.R.Phleivirus.zip>
71. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Phrappuccinovirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.066B.R.Phrappuccinovirus.zip>
72. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Pukovnikvirus*) including four species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.067B.R.Pukovnikvirus.zip>
73. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Puppervirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.068B.R.Puppervirus.zip>
74. Sváb D, Tóth I (2021) Rename the genus *Giessenvirus* (to *Hungariovirus*) (*Caudoviricetes*) https://ictv.global/ictv/proposals/2021.069B.R.Rename_Giessenvirus.zip
75. Turner D, Tolstoy I, Kropinski AM (2021) Create three new species in the genus *Rerduovirus* (*Caudoviricetes*) https://ictv.global/ictv/proposals/2021.070B.R.Rerduovirus_new_species.zip
76. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Rosariovirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.071B.R.Rosariovirus.zip>
77. Łobocka M, Stefańczyk E, Adriaenssens EM, Kropinski AM, Turner D (2021) Create four new species in the genus *Rosenblumvirus*, subfamily *Rakietenvirinae* (*Rountreeviridae*) <https://ictv.global/ictv/proposals/2021.072B.R.Rosenblumvirus.zip>
78. Turner D, Moraru C, Tolstoy I, Adriaenssens EM, Kropinski AM (2021) Create one new subfamily (*Ruthgordonvirinae*) including six genera (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.073B.R.Ruthgordonvirinae.zip>

79. Uchiyama J, Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Sagamiharavirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.074B.R.Sagamiharavirus.zip>
80. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Santafevirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.075B.R.Santafevirus.zip>
81. Wittmann J, Adriaenssens EM, Turner D, Moraru C (2021) Create seven new genera (*Efbeckayvirus*, *Penintadodekavirus*, *Vicoquintavirus*, *Trioduovirus*, *Exceevirus*, *Electravirus*, *Glaucusvirus*) including nine new species (*Schitoviridae*) https://ictv.global/ictv/proposals/2021.076B.R.Schitoviridae_new_genera.Zip
82. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Sheenvirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.077B.R.Sheenvirus.zip>
83. Turner D, Moraru C, Tolstoy I, Adriaenssens EM, Kropinski AM (2021) Create eleven new genera including 19 new species (*Caudoviricetes*) https://ictv.global/ictv/proposals/2021.078B.R.Siphoviridae_new_genera.zip
84. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Skogvirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.079B.R.Skogvirus.zip>
85. Tolstoy I, Turner D, Moraru C, Varsani A, Adriaenssens EM, Kropinski AM (2021) Create one new subfamily (*Stephanstirmvirinae*) including two genera and 14 new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.080B.R.Stephanstirmvirinae.zip>
86. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Stormageddonvirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.081B.R.Stormageddonvirus.zip>
87. Millard A, Puxty R, White D, Gannon L, Harrison C, Cook R, Adriaenssens EM, Turner D (2021) Create two new families (*Kyanoviridae* and *Straboviridae*) (*Caudoviricetes*) https://ictv.global/ictv/proposals/2021.082B.R.Tevens_new_families.zip
88. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Timshelvirus*) containing four species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.083B.R.Timshelvirus.zip>
89. Turner D, Tolstoy I, Kropinski AM (2021) Create one new species in the genus *Trigintaduovirus* (*Caudoviricetes*) https://ictv.global/ictv/proposals/2021.084B.R.Trigintaduovirus_new_species.zip
90. Knezevic P, Adriaenssens EM, Kropinski AM, Lavigne R (2021) Create four genera including 16 new species in the family *Inoviridae*, and one new genus including one new species in the family *Plectroviridae* (*Tubulavirales*) <https://ictv.global/ictv/proposals/2021.085B.R.Tubulavirales.Zip>
91. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Turbidovirus*) including 13 species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.086B.R.Turbidovirus.zip>
92. Tolstoy I, Turner D, Kropinski AM (2021) Create one new genus (*Typhavirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.087B.R.Typhavirus.zip>
93. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Veracruzvirus*) including eight species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.088B.R.Veracruzvirus.zip>
94. Tolstoy I, Moraru C, Turner D, Adriaenssens EM, Kropinski AM (2021) Create one new family (*Vilmaviridae*) including one new subfamily (*Lclasvirinae*) and one subfamily (*Mclasvirinae*) moved from the family *Siphoviridae* (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.089B.R.Vilmaviridae.zip>
95. Moraru C, Turner D, Tolstoy I, Kropinski AM (2021) Create 16 new species in the genus *Vividuovirus* (*Caudoviricetes*) https://ictv.global/ictv/proposals/2021.090B.R.Vividuovirus_new_species.zip
96. Turner D, Moraru C, Tolstoy I, Adriaenssens EM, Kropinski AM (2021) Create one new subfamily (*Weiservirinae*) including eight genera (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.091B.R.Weiservirinae.zip>
97. Moraru C, Turner D, Tolstoy I, Kropinski AM (2021) Create 17 new species in the genus *Wizardvirus* (*Caudoviricetes*) https://ictv.global/ictv/proposals/2021.092B.R.Wizardvirus_new_species.zip
98. Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Yeceytrevirus*) including one new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.093B.R.Yeceytrevirus.zip>

99. Turner D, Moraru C, Adriaenssens EM, Kropinski AM (2021) Create one new family (*Zierdtviridae*) including two new subfamilies (*Emilbogenvirinae* and *Toshachvirinae*) and eight genera (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.094B.R.Zierdtviridae.zip>
100. Moraru C, Turner D, Tolstoy I, Kropinski AM (2021) Create one new genus (*Zitichvirus*) including three new species (*Caudoviricetes*) <https://ictv.global/ictv/proposals/2021.095B.R.Zitichvirus.zip>
101. Adriaenssens EM, Turner D (2021) Error correction (*Caudoviricetes*) https://ictv.global/ictv/proposals/2021.097B.R.error_correction_Caudoviricetes.zip
102. Duarte MA, Silva JMF, Brito CR, Teixeira DS, Melo FL, Ribeiro BM, Nagata T, Campos FS (2021) Create one new species in the genus *Aviadenovirus* (*Rowavirales: Adenoviridae*) https://ictv.global/ictv/proposals/2021.001D.R.Adenoviridae_1nsp.zip
103. Fisher M, Harrison T, Nebroski M, Kruczkiewicz P, Davies J, Lung O (2021) Create one new species in the genus *Mutorquevirus* (*Anelloviridae*) https://ictv.global/ictv/proposals/2021.002D.R.Anelloviridae_1nsp.zip
104. Varsani A, Kraberger S (2021) Abolish one genus and reassign two species (*Anelloviridae*) https://ictv.global/ictv/proposals/2021.003D.R.Anelloviridae_1abgen_2spmv.zip
105. van Oers MM, Abd-Ala AMM, Bateman KS, Harrison RL, Herniou EA, Hu Z, Jehle JA, Krell PJ, Ribeiro BM (2021) Create four new species in the genus *Alphabaculovirus* and two new species in the genus *Betabaculovirus* (*Lefavirales: Baculoviridae*) https://ictv.global/ictv/proposals/2021.004D.R.Baculoviridae_6nsp.zip
106. Bateman KS, Van Oers MM, van Aerle R, Bojko J, Christiaens O, Taning CNT, Smagghe G, Stentiford GD (2021) Create two new species in the genus *Gammanudivirus* (*Lefavirales: Nudiviridae*) https://ictv.global/ictv/proposals/2021.005D.R.Nudiviridae_2nsp.zip
107. Kuhn JH, Postler TS, Dolja VV, Krupovic M, Adriaenssens EM, Di Serio F, Dutilh BE, Flores R, Harrach B, Mushegian A, Owens B, Randles J, Rubino L, Sabanadzovic S, Simmonds P, Varsani A, Zerbini M, Koonin EV (2021) Rename the family *Polydnaviridae* (as *Polydnaviriformidae*), rename the genus *Bracovirus* (as *Bracoviriform*) and rename all polydnaviriformid species to comply with the newly ICTV-mandated binomial format https://ictv.global/ictv/proposals/2021.006D.R.Polydnaviriformidae_1renfam_3rensp.zip
108. Calvignac-Spencer S, Carr M, Daugherty M, Ehlers B, Feltkamp MCW, Lauber C, Lim E, Moens UL, Pietropaolo V, Prezioso C (2021) Create two new genera (*Etapolyomavirus* and *Thetapolyomavirus*) and rename all 117 species in the family (*Sepolyvirales: Polyomaviridae*) https://ictv.global/ictv/proposals/2021.007D.R.Polyomaviridae_2ngen_117rensp.zip
109. Turina M, Chiba S, Velasco L, Ayllón MA, Suzuki N, Lee-Marzano S, Sun L, Sabanadzovic S (2021) Create one new family (*Fusariviridae*) including three new genera (*Alphafusarivirus*, *Betafusarivirus* and *Gammafusarivirus*) and 34 new species (*Durnavirales*) https://ictv.global/ictv/proposals/2021.001F.R.Fusariviridae_1newfam.zip
110. Kotta-Loizou I, Castón JR, Chiba S, Coutts RHA, Jiang D, Kim D-H, Moriyama H (2021) Rename 31 species names in family to a Latinized binomial format (*Ghabrivirales: Chrysoviridae*) https://ictv.global/ictv/proposals/2021.002F.R.Chrysoviridae_binomials.zip
111. Botella L, Manny AR, Nibert ML, Vainio E (2021) Create 100 new species and four new genera (*Cryppavirales: Mitoviridae*) https://ictv.global/ictv/proposals/2021.003F.R.Mitoviridae_100nsp_4ngen.zip
112. Sato Y, Turina M, Chiba S, Okada R, Faraz Bhatti M, Kotta-Loizou I, Coutts RHA, Kondo H, Sabanadzovic S, Suzuki N (2021) Create one new family (*Hadakaviridae*) including one new genus (*Hadakavirus*) and one new species https://ictv.global/ictv/proposals/2021.004F.R.Hadakaviridae_newfam.zip
113. Sato Y, Das S, Velasco L, Turina M, Osaki H, Kotta-Loizou I, Coutts RHA, Kondo H, Sabanadzovic S, Suzuki N (2021) Create one new order (*Yadokarivirales*), one new family (*Yadokariviridae*), two new genera (*Alphayadokarivirus* and *Betayadokarivirus*) and 10 new species in the phylum *Pisuviricota* https://ictv.global/ictv/proposals/2021.005F.R.Yadokarivirales_neworder.zip
114. Turina M, Chiba S, Velasco L, Ayllón MA, Suzuki N, Lee-Marzano S, Sun L, Sabanadzovic S (2021) Create 35 new species and eight new genera, abolish one genus (*Hypovirus*)

and rename four existing species (*Durnavirales: Hypoviridae*) https://ictv.global/ictv/proposals/2021.006F.R.Hypoviridae_8newgen_35newsp.zip

115. Candresse T, Blouin A, Cao M, Cho WK, Constable F, Mollov D, Nagata T, Saldarelli P, Tzanetakis I, Villamor DE, Sabanadzovic S (2021) Create two new genera and three new species (*Tymovirales: Gammalflexiviridae*) https://ictv.global/ictv/proposals/2021.007F.R.Gammalflexiviridae_2ngen_3nsp.zip
116. Boratto P, Oliveira G, Abrahão JS (2021) Create one family *Yaraviridae* including one new genus (*Yaravirus*) and one new species (*Yaravirus brasiliense*) in the realm *Varidnaviria* https://ictv.global/ictv/proposals/2021.008F.R.Yaraviridae_newfam.zip
117. Ayllón MA, Xie J, Donaire L, Turina M, Nerva L, Jiang D, Marzano S-Y, Sabanadzovic S (2021) Create six new genera, create 109 new species and rename three existing species (*Ourlivirales: Botourmiaviridae*) https://ictv.global/ictv/proposals/2021.009F.R.Botourmiaviridae_6newgen_109newsp.zip
118. Varsani A, Krupovic M (2021) Create two new orders, three new families and 21 new genera in the class *Arfiviricetes* (phylum *Cressdnaviricota*) https://ictv.global/ictv/proposals/2021.010F.R.Cressdna_2neword_3newfam_21newgen.zip
119. Attoui H, Mohd Jaafar F, Mertens PPC (2021) Abolish the family *Reoviridae* and promote subfamilies *Sedoreovirinae* and *Spinareovirinae* to the rank of family (*Sedoreoviridae* and *Spinareoviridae*, respectively) (*Reovirales*) https://ictv.global/ictv/proposals/2020.028M.R.Reovirales_2nfam.zip
120. Bejeran N, Dietzgen RG, Kondo H, Ramos-González P, Whitfield AE, Walker PJ, Freitas-Astúa J (2021) Create one new species in the genus *Alphanucleorhabdovirus*, one new species in the genus *Betanucleorhabdovirus*, and five new species in the genus *Cytorhabdovirus*, subfamily *Betarhabdovirinae* (*Mononegavirales: Rhabdoviridae*) https://ictv.global/ictv/proposals/2021.001M.R.Betarhabdovirinae_7nsp.zip
121. Pallandre L, Luo D, Feuvrier C, Liefbrig F, Pozet F, Dacheux L, Bigarré L, Kurath G, Walker PJ (2021) Create one new species in the genus *Perhabdovirus*, and three new genera including six new species, for viruses of fish and marine mammals (*Mononegavirales: Rhabdoviridae*) https://ictv.global/ictv/proposals/2021.003M.R.Alpharhabdovirinae_3ngen_7nsp.zip
122. Luo DS, Dacheux L (2021) Create eight new species in the genus *Sunrhavirus*, create two new species in the genus *Hapavirus*, create two new species in the genus *Vesiculovirus* and create one species in the genus *Ledantivirus* (*Mononegavirales: Rhabdoviridae*) https://ictv.global/ictv/proposals/2021.004M.R.Alpharhabdovirinae_13nsp.zip
123. Horie M (2021) Create one new genus (*Tapjovirus*) including one new species (*Mononegavirales: Filoviridae*) https://ictv.global/ictv/proposals/2021.005M.R.Filoviridae_1ngen_1nsp.zip
124. T šíková J, Krásová J, Goüy de Bellocq J (2021) Create one new species (*Mammarenavirus bituense*) in the genus *Mammarenavirus* (*Bunyavirales: Arenaviridae*) https://ictv.global/ictv/proposals/2021.006M.R.Mammarenavirus_1nsp_Bitu.zip
125. T šíková J, Krásová J, Goüy de Bellocq J (2021) Create one new species (*Mammarenavirus kwanzaense*) in genus *Mammarenavirus* (*Bunyavirales: Arenaviridae*) https://ictv.global/ictv/proposals/2021.007M.R.Mammarenavirus_1nsp_Kwanza.zip
126. Postler TS, Kuhn JH, Økland AL, Vasilakis N, Ye GY, Dietzgen RG (2021) Rename all species in the family to comply the ICTV-mandated binomial format (*Mononegavirales: Artoviridae*) https://ictv.global/ictv/proposals/2021.009M.R.Artoviridae_sprename.zip
127. Postler TS, Briese T, Dürrwald R, Horie M, Hyndman T, Nowotny N, Pfaff F, Rubbenstroth D, Tomonaga K, Kuhn JH (2021) Rename all species in the family to comply the ICTV-mandated binomial format (*Mononegavirales: Bornaviridae*) https://ictv.global/ictv/proposals/2021.010M.R.Bornaviridae_sprename.zip
128. Hierweger MM, Koch MC, Rupp M, Maes P, Di Paola N, Bruggmann R, Schmidt-Posthaus H, Kuhn JH, Seuberlich T (2021) Create one new genus and three new species (*Mononegavirales: Filoviridae*) https://ictv.global/ictv/proposals/2021.011M.R.Filoviridae_1ngen_3nsp.zip
129. Vanmechelen B, Kuhn JH, Maes P (2021) Create eight new species in genus *Jeilongvirus* (*Mononegavirales: Paramyxoviridae*) https://ictv.global/ictv/proposals/2021.014M.R.Jeilongvirus_2nsp.zip

130. Kuhn JH, Junglen S, Ye G, Postler TS, Paraskevopoulou S (2021) Create 16 new genera, create 13 new species and rename all six established species (*Mononegavirales: Lispiviridae*) https://ictv.global/ictv/proposals/2021.016M.R.Lispiviridae_16ngen_13nsp.zip
131. Postler TS, Rubino L, Sabanadzovic S, Kuhn JH (2021) Rename all species in the families *Amnoonviridae*, *Leishbuviridae*, *Myoviridae*, *Qinviridae*, *Wupedeviridae* and *Yueviridae* to comply with the ICTV-mandated binomial format (*Negarnaviricota*) https://ictv.global/ictv/proposals/2021.018M.R.Negarnaviricota_sprename.zip
132. Dietzgen RG, Kuhn JH, Vasilakis N, Firth AE, Paraskevopoulou N (2021) Create two new species in genus *Nyavirus* and one new species in genus *Formivirus* (*Mononegavirales: Nyamiviridae*) https://ictv.global/ictv/proposals/2021.019M.R.Nyamiviridae_3nsp.zip
133. Postler TS, Firth AE, Kuhn JH, Paraskevopoulou S, Vasilakis N, Dietzgen RG (2021) Rename all species in the family to comply with the ICTV-mandated binomial format (*Mononegavirales: Nyamiviridae*) https://ictv.global/ictv/proposals/2021.020M.R.Nyamiviridae_sprename.zip
134. Pfaff F, Briese T, Dürrwald R, Horie M, Hyndman T, Kuhn JH, Nowotny N, Tomonaga K, Rubbenstroth D (2021) Create one new species in genus *Orthobornavirus* (*Mononegavirales: Bornaviridae*) https://ictv.global/ictv/proposals/2021.021M.R.Orthobornavirus_1nsp.zip
135. García-Sastre A (2021) Create one new genus (*Mykissvirus*) including one new species (*Mykissvirus tructae*) (*Articulavirales: Orthomyxoviridae*) https://ictv.global/ictv/proposals/2021.022M.R.Orthomyxoviridae_1ngen_1nsp_Mykiss.zip
136. Mohr PG, Godwin SE, Morrison RN, Carson J, Crane MSTJ, Moody NJG (2021) Create one new genus (*Sardinivirus*) including one new species (*Sardinivirus pilchardi*) (*Articulavirales: Orthomyxoviridae*) https://ictv.global/ictv/proposals/2021.023M.R.Orthomyxoviridae_1ngen_1nsp_Sardino.zip
137. Postler TS, Bahl J, Casas I, García-Sastre A, Hongo S, Marshall SH, McCauley JW, Parrish CR, Perez DR, Neumann G, Runstadler JA, Schwemmle M, Kuhn JH (2021) Rename all species in the family to comply with the ICTV-mandated binomial format (*Articulavirales: Orthomyxoviridae*) https://ictv.global/ictv/proposals/2021.024M.R.Orthomyxoviridae_sprename.zip
138. Hughes HR, Alkhovskiy S, Beer M, Blair CD, Calisher CH, Drebot M, Lambert AJ, de Sousa WM, Marklewitz M (2021) Create three new genera (*Khurdivirus*, *Lakivirus* and *Lambavirus*) including three new species (*Bunyavirales: Peribunyaviridae*) https://ictv.global/ictv/proposals/2021.027M.R.Peribunyaviridae_3ngen_3nsp.zip
139. Dietzgen RG, Kuhn JH, Vasilakis N, Okland AL, Ye GY (2021) Create one new species in genus *Peropuvirus* (*Mononegavirales: Artoviridae*) https://ictv.global/ictv/proposals/2021.029M.R.Peropuvirus_1nsp.zip
140. Ballinger MJ, Pauvolid-Corrêa A, Junglen S (2021) Create four new species in the genus *Orthophasmavirus* and create one new genus (*Cicadellivirus*) including one new species (*Bunyavirales: Phasmaviridae*) https://ictv.global/ictv/proposals/2021.030M.R.Phasmaviridae_1ngen_5nsp.zip
141. Adriaenssens EM, Ghosh S, Mahar J, Neri U, Wang D, Kuhn JH (2021) Rename all species in the family to comply with the ICTV-mandated binomial format (*Durnavirales: Picobirnaviridae*) https://ictv.global/ictv/proposals/2021.032M.R.Picobirnaviridae_sprename_genrename.zip
142. García-Sastre A (2021) Create four new species in the genus *Quaranjavirus* (*Articulavirales: Orthomyxoviridae*) https://ictv.global/ictv/proposals/2021.034M.R.Quaranjavirus_4nsp.zip
143. Kuzmin IV, Blasdel KR, Dietzgen RG, Fooks AR, Freitas-Astúa J, Kondo H, Kurath G, Tesh RB, Vasilakis N, Whitfield AE, Walker PJ (2021) Create two new genera (*Amplylivirus*, *Replylivirus*) including two new species (*Mononegavirales: Rhabdoviridae*) https://ictv.global/ictv/proposals/2021.035M.R.Rhabdoviridae_2ngen_2nsp.zip
144. Walker PJ, Freitas-Astúa J, Bejerman N, Blasdel KR, Dietzgen RG, Fooks A, Kondo H, Kurath G, Kuzmin IV, Ramos-González PL, Shi M, Tesh RB, Tordo N, Vasilakis N, Whitfield AE (2021) Rename all 249 existing rhabdovirus species (*Mononegavirales: Rhabdoviridae*) https://ictv.global/ictv/proposals/2021.036M.R.Rhabdoviridae_sprename.zip
145. Postler TS, Kurath G, Kuhn JH, Hyndman TH (2021) Rename all species in the family to comply with the ICTV-mandated binomial format (*Mononegavirales: Sunviridae*) https://ictv.global/ictv/proposals/2021.037M.R.Sunviridae_sprename.zip

146. García-Sastre A (2021) Create six new species in the genus *Thogotovirus* (*Articulavirales: Orthomyxoviridae*) https://ictv.global/ictv/proposals/2021.038M.R.Thogotovirus_6nsp.zip
147. Kuhn JH, Junglen S, Postler TS, Paraskevopoulou S (2021) Create ten new genera, create eight new species, abolish one species, and rename all six remaining species (*Mononegavirales: Ximoviridae*) https://ictv.global/ictv/proposals/2021.039M.R.Ximoviridae_11ngen_8nsp.zip
148. Turina M, Sabanadzovic S, Kuhn JH (2021) Create two new families (*Discoviridae, Tulasviridae*), each including one new genus (*Bunyavirales*) https://ictv.global/ictv/proposals/2021.040M.R.Bunyavirales_2nfam_2ngen_6nsp.zip
149. Jiang D, Ayllón MA, Marzano S-Y, Kondo H, Turina M (2021) Create five new species in genera *Auricularimonavirus, Botrytimonavirus* and *Sclerotimonavirus* (*Mononegavirales: Mymonaviridae*) https://ictv.global/ictv/proposals/2021.041M.R.Mymonaviridae_5nsp.zip
150. Kuhn JH, Krupovic M, Walker PJ (2021) Correction of mistakes inadvertently introduced into taxonomy (*Riboviria, Duplodnaviria*) https://ictv.global/ictv/proposals/2021.042M.R.Corrections_Riboviria_Duplodnaviria.zip
151. Kuhn JH, Digiario M, Junglen S, Walker PJ (2021) Additional corrections of mistakes inadvertently introduced into taxonomy of the *Mononegavirales* and *Bunyavirales* https://ictv.global/ictv/proposals/2021.043M.R.Corrections_Mononegavirales_Bunyavirales.zip
152. Fuchs M, Hily J-M, Petrzik K, Sanfaçon H, Thompson J, van der Vlugt R, Wetzel T (2021) Create one new genus (*Stralarivirus*) and 20 new species in the family *Secoviridae* (*Picornavirales*) https://ictv.global/ictv/proposals/2021.002P.R.Secoviridae_1ng_20ns.zip
153. Umber M, Teycheney P-Y (2021) Create two new species and abolish one species (*Schefflera ringspot virus*) in the genus *Badnavirus* (*Ortervirales: Caulimoviridae*) https://ictv.global/ictv/proposals/2021.003P.R.Badnavirus_2ns_1as.zip
154. Elbeaino T, Demian E, Kontra L, Jaksa-Czotter N, Slimen AB, Fabian R, Lazar J, Tamisier L, Digiario M, Massart S, Varallyay E (2021) Create one new species (*Anulavirus GLPV*) in the genus *Anulavirus* (*Martellivirales: Bromoviridae*) https://ictv.global/ictv/proposals/2021.004P.R.Anulavirus_1ns.zip
155. Safarova D, Candresse T, Navratil M (2021) Create one new species (*Bromovirus SVS*) in the genus *Bromovirus* (*Martellivirales: Bromoviridae*) https://ictv.global/ictv/proposals/2021.005P.R.Bromovirus_1ns.zip
156. Inoue-Nagata AK, Wylie SJ, Jordan R, Kreuze JF, Li F, Lopez-Moya JJ, Makinen K, Ohshima K (2021) Create five new species in the genus *Potyvirus* (*Patatavirales: Potyviridae*) https://ictv.global/ictv/proposals/2021.006P.R.Potyvirus_5ns_3as.zip
157. Candresse T, Cao M, Constable F, Blouin A, Cho WK, Nagata T, Sabanadzovic S, Saldarelli P, Tzanetakis I, Villamor DE, Mollov D (2021) Create two new genera and 23 new species (*Tymovirales: Betaflexiviridae*) https://ictv.global/ictv/proposals/2021.007P.R.Betaflexiviridae_2ng_23nsp.zip
158. Melzer MJ, Freitas-Astúa J, Li JM, Peters J, Ramos-González PL, Rodrigues JVC, Roy A (2021) Create one new species in the genus *Cilevirus* (*Martellivirales: Kitaviridae*) https://ictv.global/ictv/proposals/2021.008P.R.Cilevirus_1ns.zip
159. Desbiez C (2021) Create one new species in the genus *Sobemovirus* (*Sobelivirales: Solemoviridae*) https://ictv.global/ictv/proposals/2021.009P.R.Sobemovirus_1ns.zip
160. Rumbou A, Candresse T, von Barga S, Büttner C (2021) Create one new species (*Emaravirus aceris*) in the genus *Emaravirus* (*Bunyavirales: Fimoviridae*) https://ictv.global/ictv/proposals/2021.010P.R.Emaravirus_1ns.zip
161. Kubota K, Yanagisawa H, Chiaki Y, Yamasaki J, Horikawa H, Tsunekawa K, Morita Y, Kadono F (2021) Create one new species (*Emaravirus chrysanthemi*) in the genus *Emaravirus* (*Bunyavirales: Fimoviridae*) https://ictv.global/ictv/proposals/2021.011P.R.Emaravirus_1ns.zip
162. Rehanek M, von Barga S, Bandte M, Karlin DG, Büttner C (2021) Create one new species (*Emaravirus quercus*) in the genus *Emaravirus* (*Bunyavirales: Fimoviridae*) https://ictv.global/ictv/proposals/2021.012P.R.Emaravirus_1ns.zip
163. Digiario M, Elbeaino T, Kuhn JH, Postler TS (2021) Rename all existing species to comply with the newly ICTV-mandated binomial species format (*Bunyavirales: Fimoviridae*) https://ictv.global/ictv/proposals/2021.013P.R.Fimoviridae_rename.zip

164. Postler TS, Kuhn JH, Vaira AM, Dal Bó E, Gago-Zachert S, García ML, Hammond J, Natsuaki T, Navarro JA, Neriya Y, Pallás V, Reyes CA, Sasaya T, Tzanetakis I, Verbeek M (2021) Rename all species to comply with newly ICTV-mandated binomial species format (*Serpentovirales: Aspiviridae*) https://ictv.global/ictv/proposals/2021.014P.R.Aspiviridae_rename.zip
165. Di Serio F, Li S-F, Matousek J, Pallas V, Randles JW, Sano T, Verhoeven JThJ, Vidalakis G, Owens RA (2021) Modify the species demarcation criteria (*Pospiviroidae* and *Avsunviroidae*) https://ictv.global/ictv/proposals/2021.015P.R.Viroid_demarcation_criteria.pdf
166. Di Serio F, Li S-F, Matousek J, Pallas V, Randles JW, Sano T, Verhoeven JThJ, Vidalakis G, Owens RA (2021) Create eleven new species in the family (*Pospiviroidae*) https://ictv.global/ictv/proposals/2021.016P.R.Pospiviroidae_11ns.zip
167. Scheets K, Rubino L, Jordan R, White KA, Hernandez C (2021) Create one new genus (*Tralespevirus*) and two new species (*Tralespevirus lespedezae* and *Tralespevirus gompholobii*) in the subfamily *Procedovirinae* (*Tolivirales: Tombusviridae*) https://ictv.global/ictv/proposals/2021.018P.R.Tombusviridae_Ing_2ns.zip
168. Sabanadzovic S, Bar-Joseph M, Candresse T, Maree HJ, Melzer MJ, Menzel W, Minafra A, Mollov D, Tzanetakis IE (2021) Create three new genera and abolish two unassigned species (*Martellivirales: Closteroviridae*) https://ictv.global/ictv/proposals/2021.019P.R.Closteroviridae_3ngen_abolish_2sp.zip
169. Aboughanem-Sabanadzovic N, Kuhn JH, Rubino L, Sabanadzovic S (2021) Rename species in the family *Mayoviridae* to comply with ICTV-mandated binomial format (*Martellivirales: Mayoviridae*) https://ictv.global/ictv/proposals/2021.020P.R.Mayoviridae_binomials.zip
170. Smith DB, Drexler JF, Meng X-J, Norder H, Okamoto H, van der Poel WHM, Purdy MA, Reuter G, de Souza WM, Ulrich RG, Yang X-L, Zhang Y (2021) Create two subfamilies (*Orthohepevirinae, Parahepevirinae*), four genera and five species, and rename five species (*Hepelivirales: Hepeviridae*) <https://ictv.global/ictv/proposals/2021.001S.R.Hepeviridae.zip>
171. Chen YP, Valles SM, Jan E, Firth A, de Miranda J, Ryabov E, Schroeder D, Echeverría MG, Zheng HQ (2021) Create one new species in the genus *Iflavirus* (*Picornavirales: Iflaviridae*) https://ictv.global/ictv/proposals/2021.002S.R.Iflavirus_1nsp.zip
172. Chen YP, Valles SM, Jan E, Firth A, de Miranda J, Ryabov E, Schroeder D, Echeverría MG, Zheng HQ (2021) Abolish one species and rename one species in the genus *Iflavirus* (*Picornavirales: Iflaviridae*) https://ictv.global/ictv/proposals/2021.003S.R.Iflavirus_abo1sp_ren1sp.zip
173. de Miranda JR, Granberg F, Onorati P, Jansson A, Berggren Å (2021) Create one new species in the genus *Iflavirus* (*Picornavirales: Iflaviridae*) https://ictv.global/ictv/proposals/2021.004S.R.Iflavirus_1nsp.zip
174. Gorbalenya AE, Samborskiy D, Junglen S, Lauber C, Neuman BW, Ziebuhr J (2021) Create 47 new taxa in the order, ranging from subfamilies to species (*Nidovirales*) <https://ictv.global/ictv/proposals/2021.005S.R.Nidovirales.zip>
175. Knowles NJ, Gorbalenya AE, Lindberg AM, Oberste MS, Palmenberg AC, Reuter G, Simmonds P, Skern T, Tapparel C, Wolthers KC, Woo PCY, Zell R (2021) Create five new subfamilies (*Caphthovirinae, Kodimesavirinae, Ensavirinae, Paavivirinae* and *Heptrevirinae*) (*Picornavirales: Picornaviridae*) https://ictv.global/ictv/proposals/2021.006S.R.Picornaviridae_5nsfam.zip
176. Walker PJ, Siddell SG, Lefkowitz EJ, Mushegian AR, Adriaenssens EM, Alfenas-Zerbini P, Davison AJ, Dempsey DM, Dutilh BE, García ML, Harrach B, Harrison RL, Hendrickson RC, Junglen S, Knowles NJ, Krupovic M, Kuhn JH, Lambert AJ, Łobocka M, Nibert ML, Oksanen HM, Orton RJ, Robertson DL, Rubino L, Sabanadzovic S, Simmonds P, Smith DB, Suzuki N, Van Dooerslaer K, Vandamme AM, Varsani A, Zerbini FM (2021) Changes to virus taxonomy and to the International Code of Virus Classification and Nomenclature ratified by the International Committee on Taxonomy of Viruses (2021). *Arch Virol* 166(9):2633–2648. 10.1007/s00705-021-05156-1 [PubMed: 34231026]
177. Zerbini FM, Siddell SG, Mushegian AR, Walker PJ, Lefkowitz EJ, Adriaenssens EM, Alfenas-Zerbini P, Dutilh BE, García ML, Junglen S, Krupovic M, Kuhn JH, Lambert AJ, Łobocka M, Oksanen HM, Robertson DL, Rubino L, Sabanadzovic S, Simmonds P, Suzuki N, Van Doorslaer K, Vandamme AM, Varsani A (2022) Differentiating between viruses

and virus species by writing their names correctly. *Arch Virol* 167(4):1231–1234. 10.1007/s00705-021-05323-4.PMID:35043230;PMCID:PMC9020231 [PubMed: 35043230]

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Table 1

Summary of taxonomic changes approved in March 2022

Rank	Total, MSL-36 ^a	New	Moved	Abolished	Renamed	Promoted	Total, MSL-37 ^b
Realm	6	0	0	0	0	0	6
Subrealm	0	0	0	0	0	0	0
Kingdom	10	0	0	0	0	0	10
Subkingdom	0	0	0	0	0	0	0
Phylum	17	0	0	0	0	0	17
Subphylum	2	0	0	0	0	0	2
Class	39	0	0	0	0	0	39
Subclass	0	0	0	0	0	0	0
Order	59	7	0	1	0	0	65
Suborder	8	0	0	0	0	0	8
Family	189	48 ^c	11	4	1	0	233
Subfamily	136	37	32	2	0	3	168
Genus	2,224	390	571	8	5	0	2,606
Subgenus	70	14	0	0	0	0	84
Species	9,110	1,342	103	18	3,354	0	10,434

^aTotal number of taxa in the ICTV Master Species List (MSL) prior to 2022 ratification^bTotal number of taxa now recognized and reported in the ICTV MSL^cIncludes three families promoted from subfamily

Table 2

New orders and families ratified by ICTV in 2022

Lineage	Taxon History Page
New orders	
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Crassvirales</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113057
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Kijokansvirales</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112155
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Methanobavirales</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112156
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Thumleimnavirales</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112154
<i>Monodnaviria</i> : <i>Shotokuvirinae</i> : <i>Cressdnaviricota</i> : <i>Arfiviricetes</i> : <i>RhendeIVirales</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113282
<i>Monodnaviria</i> : <i>Shotokuvirinae</i> : <i>Cressdnaviricota</i> : <i>Arfiviricetes</i> : <i>Rohanvirales</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113293
<i>Riboviria</i> : <i>Orthomavirinae</i> : <i>Pisuviricota</i> : <i>Yadokarivirales</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112466
New families	
<i>Adnaviria</i> : <i>Zilligvirinae</i> : <i>Taleaviricota</i> : <i>Tokiviricetes</i> : <i>Ligamemvirales</i> : <i>Ungulaviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112214
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Aggregaviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113573
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Methanobavirales</i> : <i>Anaerodviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112170
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Assidaviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113549
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Casjensviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112984
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Crassvirales</i> : <i>Crevaviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113058
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Duneeviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113559
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Flexiviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112168
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Forsetviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113569
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Halomagnusviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112161
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Haloferviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112165
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Halomagnusviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112164
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Helgolandviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113556
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Crassvirales</i> : <i>Intestiviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113059
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Kyanoviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113665
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Methanobavirales</i> : <i>Leisingerviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112169
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Madisaviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112160
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Mesyanzhinoviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112407
<i>Duplodnaviria</i> : <i>Heunggongvirinae</i> : <i>Uroviricota</i> : <i>Caudoviricetes</i> : <i>Molycolviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113562

Lineage	Taxon History Page
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Naomiviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112771
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Orlajensenviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112790
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Pachyviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113536
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Peduoviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202100225
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Pervagoviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113545
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Kirjokansvirales:Pyristoviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112166
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Thumleimavirales:Queuoviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112162
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Saparoviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112159
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Kirjokansvirales:Shortaselviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112167
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Thumleimavirales:Soleiviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112163
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Crassvirales:Steigviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113060
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Straboviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113666
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Suolviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112158
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Crassvirales:Suolviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113061
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Crassvirales:Suolviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112157
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Vilmaviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112658
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Winoviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113566
<i>Duplodnaviria:Heunggongvirinae:Uroviricota:Caudoviricetes:Zierdviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113388
<i>Monodnaviria:Shotokuvirinae:Cressdnaviricota:Arfviricetes:Rivendellvirales:Naryaviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113283
<i>Monodnaviria:Shotokuvirinae:Cressdnaviricota:Arfviricetes:Rohanvirales:Nenyaviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113294
<i>Monodnaviria:Shotokuvirinae:Cressdnaviricota:Arfviricetes:Cirhviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113251
<i>Varidnaviria:Bamfordvirinae:Yaraviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112528
<i>Riboviria:Orthornavirinae:Negamaviricota:Polyploviricotina:Ellioviricetes:Bunyavirales:Discoviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112952
<i>Riboviria:Orthornavirinae:Pisuviricota:Duplopviricetes:Dumnavirales:Fusaviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202113711
<i>Riboviria:Orthornavirinae:Pisuviricota:Hadakaviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112463
<i>Riboviria:Orthornavirinae:Duplomaviricota:Resentoviricetes:Reovirales:Sedoreoviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202104872
<i>Riboviria:Orthornavirinae:Duplomaviricota:Resentoviricetes:Reovirales:Spinareoviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202104918
<i>Riboviria:Orthornavirinae:Negamaviricota:Polyploviricotina:Ellioviricetes:Bunyavirales:Tulasviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112959
<i>Riboviria:Orthornavirinae:Pisuviricota:Yadokarvirales:Yadokarviridae</i>	https://ictv.global/taxonomy/p/taxonomy-history?taxnode_id=202112467