



Taxonomy of the order *Mononegavirales*: update 2018

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Abstract

In 2018, the order *Mononegavirales* was expanded by inclusion of 1 new genus and 12 novel species. This article presents the updated taxonomy of the order *Mononegavirales* as now accepted by the International Committee on Taxonomy of Viruses (ICTV) and summarizes additional taxonomic proposals that may affect the order in the near future.

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Introduction

The virus order *Mononegavirales* was established in 1991 to accommodate related viruses with nonsegmented, linear, single-stranded, negative-sense RNA genomes distributed among three families [19, 20]. Today, the order includes 8 families [1, 2, 11, 21]. Amended/emended order descriptions were published in 1995 [5], 1997 [22], 2000 [23], 2005 [24], 2011 [6], 2016 [2], and 2017 [3]. In 2017, the Study Groups of the International Committee on Taxonomy of Viruses (ICTV) responsible for the taxonomy of the order and its 8 families assigned unclassified mononegaviruses to existing or novel taxa and continued efforts to streamline the order nomenclature in collaboration with other virus experts. Here we present the changes that were proposed via official ICTV taxonomic proposals (TaxoProps) at <http://www.ictvonline.org/> in 2017 and accepted by the ICTV Executive Committee (EC). These changes are part of the official ICTV taxonomy as of 2018.

Taxonomic changes at the order rank

In 2018, no changes were made at the order rank.

Taxonomic changes at the family rank

Bornaviridae

The family *Bornaviridae* was expanded in 2018 by creation of a second genus (*Carbovirus*), including two novel species for the newly discovered jungle carpet python virus (JCPV) and southwest carpet python virus (SWCPV) found in carpet pythons (Pythonidae: *Morelia spilota*), respectively [10]. The previously established genus *Bornavirus* was renamed *Orthobornavirus* to remove the ambiguity of the terms “bornavirus”/“bornaviral” that resulted due to the creation of the second genus (in absence of the genus name change, “bornavirus”/“bornaviral” could refer either to all members of the family *Bornaviridae* or only to those of the genus *Bornavirus*). All binomial species names of the genus *Bornavirus* were adjusted by replacing the genus epithet “bornavirus” with “orthobornavirus” (TaxoProps 2017.005M.A.v1. Carbovirus and 2017.004M.A.v1. Bornaviridae_ren).

Filoviridae

The species name *Tai Forest ebolavirus* was changed to *Tai Forest ebolavirus* by removal of the diaeresis (TaxoProp 2017.001G.A.v2.43sren).

Mymonaviridae

In 2018, no changes were made at the family rank.

Nyamiviridae

In 2018, no changes were made at the family rank.

Paramyxoviridae

The genus *Avulavirus* was expanded in 2018 by the addition of six species (TaxoProp 2017.010M.A.v2. Avulavirus_6sp). The species *Avian avulavirus 14–16* were established for avian paramyxoviruses 14–16 (APMV-14–16) that were recently discovered in an unspecified duck in Japan, a white-rumped sandpiper (Scolopacidae: *Calidris fuscicollis*) in Brazil, and unspecified birds in South Korea, respectively [12, 27, 28]. The species *Avian avulavirus 17–19* were established for Antarctic penguin viruses A–C (APVA–APVC) that were recently discovered in Antarctic long-tailed gentoo penguins (Spheniscidae: *Pygoscelis papua*) [18].

Pneumoviridae

In 2018, no changes were made at the family rank.

Rhabdoviridae

The genus *Ledantavirus* was expanded in 2018 by one species, *Kanywara ledantavirus*, for Kanywara virus (KYAV) recently discovered in an unclassified nycteribiid batfly in Uganda [8] (TaxoProp 2017.009M.A.v1. Ledantavirus_sp).

The genus *Lyssavirus* was expanded by the addition of two novel species, *Gannoruwa bat lyssavirus* and *Lleida bat lyssavirus*, for Gannoruwa bat lyssavirus (GBLV) and Lleida bat virus (LLEBV), recently discovered in Indian flying foxes (*Pteropus medius*) in Sri Lanka and in a Schreibers’s long-fingered bat (*Miniopterus schreibersii*) in Spain in 2011, respectively [4, 9, 15] (TaxoProps 2017.013M.A.v1. Lyssavirus_sp and 2017.014M.A.v1. Lyssavirus_sp).

Finally, the genus *Tibrovirus* was expanded by one species, *Beatrice Hill tibrovirus*, for Beatrice Hill virus (BHV) discovered in 1984 in Australian biting midges (Ceratopogonidae: *Culicoides peregrinus*) [26, 29] (TaxoProp 2017.019M.U.v1. Tibrovirus_sp).

Sunviridae

In 2018, no changes were made at the family rank.

Table 1 ICTV-accepted taxonomy of the order *Mononegavirales* as of 2018. Listed are all mononegaviruses that have been classified into species

| Genus | Species [¶] | Virus (Abbreviation) [¶] |
|---------------------------------------|--|---|
| Family Bornaviridae | | |
| <i>Carbovirus</i> | <i>Queensland carbovirus</i> * | jungle carpet python virus (JCPV) |
| | <i>Southwest carbovirus</i> | southwest carpet python virus (SWCPV) |
| <i>Orthobornavirus</i> | <i>Elapid 1 orthobornavirus</i> | Loveridge's garter snake virus 1 (LGSV-1) |
| | <i>Mammalian 1 orthobornavirus</i> * | Borna disease virus 1 (BoDV-1) |
| | | Borna disease virus 2 (BoDV-2) |
| | <i>Mammalian 2 orthobornavirus</i> | variegated squirrel bornavirus 1 (VSBV-1) |
| | <i>Passeriform 1 orthobornavirus</i> | canary bornavirus 1 (CnBV-1) |
| | | canary bornavirus 2 (CnBV-2) |
| | | canary bornavirus 3 (CnBV-3) |
| | <i>Passeriform 2 orthobornavirus</i> | estrildid finch bornavirus 1 (EsBV-1) |
| | <i>Psittaciform 1 orthobornavirus</i> | parrot bornavirus 1 (PaBV-1) |
| | | parrot bornavirus 2 (PaBV-2) |
| | | parrot bornavirus 3 (PaBV-3) |
| | parrot bornavirus 4 (PaBV-4) | |
| | parrot bornavirus 7 (PaBV-7) | |
| | parrot bornavirus 5 (PaBV-5) | |
| <i>Psittaciform 2 orthobornavirus</i> | aquatic bird bornavirus 1 (ABBV-1) | |
| <i>Waterbird 1 orthobornavirus</i> | aquatic bird bornavirus 2 (ABBV-2) | |
| Family Filoviridae | | |
| <i>Cuevavirus</i> | <i>Lloviu cuevavirus</i> * | Lloviu virus (LLOV) |
| <i>Ebolavirus</i> | <i>Bundibugyo ebolavirus</i> | Bundibugyo virus (BDBV) |
| | <i>Reston ebolavirus</i> | Reston virus (RESTV) |
| | <i>Sudan ebolavirus</i> | Sudan virus (SUDV) |
| | <i>Tai Forest ebolavirus</i> | Tai Forest virus (TAFV) |
| | <i>Zaire ebolavirus</i> * | Ebola virus (EBOV) |
| <i>Marburgvirus</i> | <i>Marburg marburgvirus</i> * | Marburg virus (MARV) |
| | | Ravn virus (RAVV) |
| Family Mymonaviridae | | |
| <i>Sclerotimonavirus</i> | <i>Sclerotinia sclerotimonavirus</i> * | Sclerotinia sclerotiorum negative-stranded RNA virus 1 (SsNSRV-1) |
| Family Nyamiviridae | | |
| <i>Nyavirus</i> | <i>Midway nyavirus</i> | Midway virus (MIDWV) |
| | <i>Nyamanini nyavirus</i> * | Nyamanini virus (NYMV) |
| | <i>Sierra Nevada nyavirus</i> | Sierra Nevada virus (SNVV) |
| <i>Peropuvirus</i> | <i>Pteromalus puparum peropuvirus</i> * | Pteromalus puparum negative-strand RNA virus 1 (PpNSRV-1) |
| <i>Socyvirus</i> | <i>Soybean cyst nematode socyvirus</i> * | soybean cyst nematode virus 1 (SbCNV-1) |
| Family Paramyxoviridae | | |
| <i>Aquaparamyxovirus</i> | <i>Salmon aquaparamyxovirus</i> * | Atlantic salmon paramyxovirus (AsaPV) |
| <i>Avulavirus</i> | <i>Avian avulavirus 1</i> * | avian paramyxovirus 1 (APMV-1) ¹ |
| | <i>Avian avulavirus 2</i> | avian paramyxovirus 2 (APMV-2) |
| | <i>Avian avulavirus 3</i> | avian paramyxovirus 3 (APMV-3) |
| | <i>Avian avulavirus 4</i> | avian paramyxovirus 4 (APMV-4) |
| | <i>Avian avulavirus 5</i> | avian paramyxovirus 5 (APMV-5) |
| | <i>Avian avulavirus 6</i> | avian paramyxovirus 6 (APMV-6) |
| | <i>Avian avulavirus 7</i> | avian paramyxovirus 7 (APMV-7) |

Table 1 (continued)

| Genus | Species [¶] | Virus (Abbreviation) [¶] |
|----------------------|-------------------------------------|--|
| | <i>Avian avulavirus 8</i> | avian paramyxovirus 8 (APMV-8) |
| | <i>Avian avulavirus 9</i> | avian paramyxovirus 9 (APMV-9) |
| | <i>Avian avulavirus 10</i> | avian paramyxovirus 10 (APMV-10) |
| | <i>Avian avulavirus 11</i> | avian paramyxovirus 11 (APMV-11) |
| | <i>Avian avulavirus 12</i> | avian paramyxovirus 12 (APMV-12) |
| | <i>Avian avulavirus 13</i> | avian paramyxovirus 13 (APMV-13) |
| | <i>Avian avulavirus 14</i> | avian paramyxovirus 14 (APMV-14) |
| | <i>Avian avulavirus 15</i> | avian paramyxovirus 15 (APMV-15) |
| | <i>Avian avulavirus 16</i> | avian paramyxovirus 16 (APMV-16) |
| | <i>Avian avulavirus 17</i> | Antarctic penguin virus A (APV-A) |
| | <i>Avian avulavirus 18</i> | Antarctic penguin virus B (APV-B) |
| | <i>Avian avulavirus 19</i> | Antarctic penguin virus C (APV-C) |
| <i>Ferlavirus</i> | <i>Reptilian ferlavirus*</i> | Fer-de-Lance virus (FDLV) |
| <i>Henipavirus</i> | <i>Cedar henipavirus</i> | Cedar virus (CedV) |
| | <i>Ghanaian bat henipavirus</i> | Kumasi virus (KV) ² |
| | <i>Hendra henipavirus*</i> | Hendra virus (HeV) |
| | <i>Mojiang henipavirus</i> | Mòjiāng virus (MojV) |
| | <i>Nipah henipavirus</i> | Nipah virus (NiV) |
| <i>Morbillivirus</i> | <i>Canine morbillivirus</i> | canine distemper virus (CDV) |
| | <i>Cetacean morbillivirus</i> | cetacean morbillivirus (CeMV) |
| | <i>Feline morbillivirus</i> | feline morbillivirus (FeMV) |
| | <i>Measles morbillivirus*</i> | measles virus (MeV) |
| | <i>Small ruminant morbillivirus</i> | peste-des-petits-ruminants virus (PPRV) |
| | <i>Phocine morbillivirus</i> | phocine distemper virus (PDV) |
| | <i>Rinderpest morbillivirus</i> | rinderpest virus (RPV) |
| <i>Respirovirus</i> | <i>Bovine respirovirus 3</i> | bovine parainfluenza virus 3 (BPIV-3) |
| | <i>Human respirovirus 1</i> | human parainfluenza virus 1 (HPIV-1) |
| | <i>Human respirovirus 3</i> | human parainfluenza virus 3 (HPIV-3) |
| | <i>Porcine respirovirus 1</i> | porcine parainfluenza virus 1 (PPIV-1) |
| | <i>Murine respirovirus*</i> | Sendai virus (SeV) ³ |
| <i>Rubulavirus</i> | <i>Achimota rubulavirus 1</i> | Achimota virus 1 (AchPV-1) |
| | <i>Achimota rubulavirus 2</i> | Achimota virus 2 (AchPV-2) |
| | <i>Bat mumps rubulavirus</i> | bat mumps virus (BMV) ⁴ |
| | <i>Canine rubulavirus</i> | parainfluenza virus 5 (PIV-5) ⁵ |
| | <i>Human rubulavirus 2</i> | human parainfluenza virus 2 (HPIV-2) |
| | <i>Human rubulavirus 4</i> | human parainfluenza virus 4a (HPIV-4a) |
| | | human parainfluenza virus 4b (HPIV-4b) |
| | <i>Mapuera rubulavirus</i> | Mapuera virus (MapV) |
| | <i>Menangle rubulavirus</i> | Menangle virus (MenPV) |
| | <i>Mumps rubulavirus*</i> | mumps virus (MuV) |
| | <i>Porcine rubulavirus</i> | La Piedad Michoacán Mexico virus (LPMV) ⁶ |
| | <i>Simian rubulavirus</i> | simian virus 41 (SV-41) |
| | <i>Sosuga rubulavirus</i> | Sosuga virus |
| | <i>Teviot rubulavirus</i> | Teviot virus (TevPV) |
| | <i>Tioman rubulavirus</i> | Tioman virus (TioPV) |
| | <i>Tuhoko rubulavirus 1</i> | Tuhoko virus 1 (ThkPV-1) |
| | <i>Tuhoko rubulavirus 2</i> | Tuhoko virus 2 (ThkPV-2) |
| | <i>Tuhoko rubulavirus 3</i> | Tuhoko virus 3 (ThkPV-3) |

Table 1 (continued)

| Genus | Species [¶] | Virus (Abbreviation) [¶] | |
|-----------------------------|--|---|---------------------------------------|
| Family <i>Pneumoviridae</i> | | | |
| <i>Metapneumovirus</i> | <i>Avian metapneumovirus</i> * | avian metapneumovirus (AMPV) ⁷ | |
| | <i>Human metapneumovirus</i> | human metapneumovirus (HMPV) | |
| <i>Orthopneumovirus</i> | <i>Bovine orthopneumovirus</i> | bovine respiratory syncytial virus (BRSV) | |
| | <i>Human orthopneumovirus</i> * | human respiratory syncytial virus A2 (HRSV-A2) | |
| | <i>Murine orthopneumovirus</i> | human respiratory syncytial virus B1 (HRSV-B1) | |
| Family <i>Rhabdoviridae</i> | | | |
| <i>Almendravirus</i> | <i>Arboretum almdravirus</i> | Arboretum virus (ABTV) | |
| | <i>Balsa almdravirus</i> | Balsa virus (BALV) | |
| | <i>Coot Bay almdravirus</i> | Coot Bay virus (CBV) | |
| | <i>Puerto Almendras almdravirus</i> * | Puerto Almendras virus (PTAMV) | |
| | <i>Rio Chico almdravirus</i> | Rio Chico virus (RCHV) | |
| <i>Curiovirus</i> | <i>Curionopolis curiovirus</i> * | Curionopolis virus (CURV) | |
| | <i>Iriiri curiovirus</i> | Iriiri virus (IRIRV) | |
| | <i>Itacaiunas curiovirus</i> | Itacaiunas virus (ITAV) | |
| | <i>Rochambeau curiovirus</i> | Rochambeau virus (RBUV) | |
| <i>Cytorhabdovirus</i> | <i>Alfalfa dwarf cytorhabdovirus</i> | alfalfa dwarf virus (ADV) | |
| | <i>Barley yellow striate mosaic cytorhabdovirus</i> | barley yellow striate mosaic virus (BYSMV) | |
| | <i>Broccoli necrotic yellows cytorhabdovirus</i> | broccoli necrotic yellows virus (BNYV) | |
| | <i>Colocasia bobone disease-associated cytorhabdovirus</i> | Colocasia bobone disease-associated virus (CBDaV) | |
| | <i>Festuca leaf streak cytorhabdovirus</i> | festuca leaf streak virus (FLSV) | |
| | <i>Lettuce necrotic yellows cytorhabdovirus</i> * | lettuce necrotic yellows virus (LNYV) | |
| | <i>Lettuce yellow mottle cytorhabdovirus</i> | lettuce yellow mottle virus (LYMoV) | |
| | <i>Northern cereal mosaic cytorhabdovirus</i> | northern cereal mosaic virus (NCMV) | |
| | <i>Sonchus cytorhabdovirus 1</i> | sonchus virus (SonV) | |
| | <i>Strawberry crinkle cytorhabdovirus</i> | strawberry crinkle virus (SCV) | |
| | <i>Wheat American striate mosaic cytorhabdovirus</i> | wheat American striate mosaic virus (WASMV) | |
| | <i>Dichorhavirus</i> | <i>Coffee ringspot dichorhavirus</i> | coffee ringspot virus (CoRSV) |
| | | <i>Orchid fleck dichorhavirus</i> * | orchid fleck virus (OFV) ⁸ |
| <i>Ephemerovirus</i> | <i>Adelaide River ephemerovirus</i> | Adelaide River virus (ARV) | |
| | <i>Berrimah ephemerovirus</i> | Berrimah virus (BRMV) | |
| | <i>Bovine fever ephemerovirus</i> * | bovine ephemeral fever virus (BEFV) | |
| | <i>Kimberley ephemerovirus</i> | Kimberley virus (KIMV) | |
| | | Malakal virus (MALV) | |
| | <i>Koolpinyah ephemerovirus</i> | Koolpinyah virus (KOOLV) | |
| | <i>Kotonkan ephemerovirus</i> | kotonkan virus (KOTV) | |
| | <i>Obodhiang ephemerovirus</i> | Obodhiang virus (OBOV) | |
| | <i>Yata ephemerovirus</i> | Yata virus (YATV) | |
| | <i>Hapavirus</i> | <i>Flanders hapavirus</i> | Flanders virus (FLAV) |
| <i>Hart Park hapavirus</i> | | Hart Park virus (HPV) | |
| <i>Gray Lodge hapavirus</i> | | Gray Lodge virus (GLOV) | |
| <i>Joinjakaka hapavirus</i> | | Joinjakaka virus (JOIV) | |
| <i>La Joya hapavirus</i> | | La Joya virus (LJV) | |
| <i>Kamese hapavirus</i> | | Kamese virus (KAMV) | |
| <i>Landjia hapavirus</i> | | Landjia virus (LANV = LJAV) | |
| <i>Manitoba hapavirus</i> | | Manitoba virus (MANV = MNTBV) | |
| <i>Marco hapavirus</i> | | Marco virus (MCOV) | |
| <i>Mosqueiro hapavirus</i> | | Mosqueiro virus (MQOV) | |

Table 1 (continued)

| Genus | Species [¶] | Virus (Abbreviation) [¶] |
|----------------------------------|---|---|
| <i>Ledantevirus</i> | <i>Mossuril hapavirus</i> | Mossuril virus (MOSV) |
| | <i>Ngaingan hapavirus</i> | Ngaingan virus (NGAV) |
| | <i>Ord River hapavirus</i> | Ord River virus (ORV) |
| | <i>Parry Creek hapavirus</i> | Parry Creek virus (PCV) |
| | <i>Wongabel hapavirus*</i> | Wongabel virus (WONV) |
| | <i>Barur ledantevirus</i> | Barur virus (BARV) |
| | <i>Fikirini ledantevirus</i> | Fikirini virus (FKRV) |
| | <i>Fukuoka ledantevirus</i> | Fukuoka virus (FUKV) |
| | <i>Kanyawara ledantevirus</i> | Kanyawara virus (KYAV) |
| | <i>Kern Canyon ledantevirus</i> | Kern Canyon virus (KCV) |
| | <i>Keuraliba ledantevirus</i> | Keuraliba virus (KEUV) |
| | <i>Kolente ledantevirus</i> | Kolente virus (KOLEV) |
| | <i>Kumasi ledantevirus</i> | Kumasi rhabdovirus (KRV) |
| | <i>Le Dantec ledantevirus*</i> | Le Dantec virus (LDV) |
| | <i>Mount Elgon bat ledantevirus</i> | Mount Elgon bat virus (MEBV) |
| | <i>Nkolbisson ledantevirus</i> | Nkolbisson virus (NKOV) |
| | <i>Nishimuro ledantevirus</i> | Nishimuro virus (NISV) ⁹ |
| | <i>Oita ledantevirus</i> | Oita virus (OITAV) |
| | <i>Wuhan ledantevirus</i> | Wūhàn louse fly virus 5 (WLFV-5) |
| | <i>Yongjia ledantevirus</i> | Yǒngjiā tick virus 2 (YTV-2) |
| <i>Lyssavirus</i> | <i>Aravan lyssavirus</i> | Aravan virus (ARAV) |
| | <i>Australian bat lyssavirus</i> | Australian bat lyssavirus (ABLV) |
| | <i>Bokeloh bat lyssavirus</i> | Bokeloh bat lyssavirus (BBLV) |
| | <i>Duvenhage lyssavirus</i> | Duvenhage virus (DUVV) |
| | <i>European bat 1 lyssavirus</i> | European bat lyssavirus 1 (EBLV-1) |
| | <i>European bat 2 lyssavirus</i> | European bat lyssavirus 2 (EBLV-2) |
| | <i>Gannoruwa bat lyssavirus</i> | Gannoruwa bat lyssavirus (GBLV) |
| | <i>Ikoma lyssavirus</i> | Ikoma lyssavirus (IKOV) |
| | <i>Irkut lyssavirus</i> | Irkut virus (IRKV) |
| | <i>Khujand lyssavirus</i> | Khujand virus (KHUV) |
| | <i>Lagos bat lyssavirus</i> | Lagos bat virus (LBV) |
| | <i>Lleida bat lyssavirus</i> | Lleida bat virus (LLEBV) |
| | <i>Mokola lyssavirus</i> | Mokola virus (MOKV) |
| | <i>Rabies lyssavirus*</i> | rabies virus (RABV) |
| | <i>Shimoni bat lyssavirus</i> | Shimoni bat virus (SHIBV) |
| | <i>West Caucasian bat lyssavirus</i> | West Caucasian bat virus (WCBV) |
| | <i>Novirhabdovirus</i> | <i>Hirame novirhabdovirus</i> |
| <i>Piscine novirhabdovirus</i> | | viral hemorrhagic septicemia virus (VHSV) ¹⁰ |
| <i>Salmonid novirhabdovirus*</i> | | infectious hematopoietic necrosis virus (IHNV) |
| <i>Snakehead novirhabdovirus</i> | | snakehead rhabdovirus (SHRV) |
| <i>Nucleorhabdovirus</i> | <i>Datura yellow vein nucleorhabdovirus</i> | datura yellow vein virus (DYVV) |
| | <i>Eggplant mottled dwarf nucleorhabdovirus</i> | eggplant mottled dwarf virus (EMDV) |
| | <i>Maize fine streak nucleorhabdovirus</i> | maize fine streak virus (MSFV) |
| | <i>Maize Iranian mosaic nucleorhabdovirus</i> | maize Iranian mosaic virus (MIMV) |
| | <i>Maize mosaic nucleorhabdovirus</i> | maize mosaic virus (MMV) |
| | <i>Potato yellow dwarf nucleorhabdovirus*</i> | potato yellow dwarf virus (PYDV) |
| | <i>Rice yellow stunt nucleorhabdovirus</i> | rice yellow stunt virus (RYSV) |
| | rice transitory yellowing virus (RTYV) | |
| | <i>Sonchus yellow net nucleorhabdovirus</i> | sonchus yellow net virus (SYNV) |

Table 1 (continued)

| Genus | Species [¶] | Virus (Abbreviation) [¶] |
|-------------------------------------|--|---|
| <i>Perhabdovirus</i> | <i>Sowthistle yellow vein nucleorhabdovirus</i> | sowthistle yellow vein virus (SYVV) |
| | <i>Taro vein chlorosis nucleorhabdovirus</i> | taro vein chlorosis virus (TaVVCV) |
| | <i>Anguillid perhabdovirus</i> | eel virus European X (EVEX) |
| | <i>Perch perhabdovirus</i> * | perch rhabdovirus (PRV) |
| <i>Sigmavirus</i> | <i>Sea trout perhabdovirus</i> | lake trout rhabdovirus (LTRV) |
| | <i>Drosophila affinis sigmavirus</i> | <i>Drosophila affinis</i> sigmavirus (DAffSV) |
| | <i>Drosophila ananassae sigmavirus</i> | <i>Drosophila ananassae</i> sigmavirus (DAAnaSV) |
| | <i>Drosophila immigrans sigmavirus</i> | <i>Drosophila immigrans</i> sigmavirus (DImmSV) |
| | <i>Drosophila melanogaster sigmavirus</i> * | <i>Drosophila melanogaster</i> sigmavirus (DMelSV) |
| | <i>Drosophila obscura sigmavirus</i> | <i>Drosophila obscura</i> sigmavirus (DObsSV) |
| | <i>Drosophila tristis sigmavirus</i> | <i>Drosophila tristis</i> sigmavirus (DTriSV) |
| <i>Sprivirus</i> | <i>Muscina stabulans sigmavirus</i> | <i>Muscina stabulans</i> sigmavirus (MStaSV) |
| | <i>Carp sprivirus</i> * | spring viremia of carp virus (SVCV) |
| | <i>Pike fry sprivirus</i> | grass carp rhabdovirus (GrCRV) |
| <i>Sripuvirus</i> | | pike fry rhabdovirus (PFRV) |
| | | tench rhabdovirus (TenRV) |
| | <i>Almpiwar sripuvirus</i> | Almpiwar virus (ALMV) |
| | <i>Chaco sripuvirus</i> | Chaco virus (CHOV) |
| <i>Tibrovirus</i> | <i>Niakha sripuvirus</i> * | Niakha virus (NIAV) |
| | <i>Sena Madureira sripuvirus</i> | Sena Madureira virus (SMV) |
| | <i>Sripur sripuvirus</i> | Sripur virus (SRIV) |
| | <i>Bas Congo tibrovirus</i> | Bas-Congo virus (BASV) |
| | <i>Beatrice Hill tibrovirus</i> | Beatrice Hill virus (BHV) |
| | <i>Coastal Plains tibrovirus</i> | Coastal Plains virus (CPV) |
| | <i>Ekpoma 1 tibrovirus</i> | Ekpoma virus 1 (EKV-1) |
| <i>Ekpoma 2 tibrovirus</i> | Ekpoma virus 2 (EKV-2) | |
| <i>Tupavirus</i> | <i>Sweetwater Branch tibrovirus</i> | Sweetwater Branch virus (SWBV) |
| | <i>Tibrogargan tibrovirus</i> * | Bivens Arm virus (BAV) |
| | <i>Durham tupavirus</i> * | Tibrogargan virus (TIBV) |
| | <i>Klamath tupavirus</i> | Durham virus (DURV) |
| <i>Varicosavirus</i> | <i>Tupaia tupavirus</i> | Klamath virus (KLAV) |
| | <i>Lettuce big-vein associated varicosavirus</i> * | tupaia virus (TUPV) |
| <i>Vesiculovirus</i> | | lettuce big-vein associated virus (LBVaV) ¹¹ |
| | <i>Alagoas vesiculovirus</i> | vesicular stomatitis Alagoas virus (VSAV) |
| | <i>American bat vesiculovirus</i> | American bat vesiculovirus (ABVV) |
| | <i>Carajas vesiculovirus</i> | Carajás virus (CJSV) |
| | <i>Chandipura vesiculovirus</i> | Chandipura virus (CHPV) |
| | <i>Cocal vesiculovirus</i> | Cocal virus (COCV) |
| | <i>Indiana vesiculovirus</i> * | vesicular stomatitis Indiana virus (VSIV) |
| | <i>Isfahan vesiculovirus</i> | Isfahan virus (ISFV) |
| | <i>Jurona vesiculovirus</i> | Jurona virus (JURV) |
| | <i>Malpais Spring vesiculovirus</i> | Malpais Spring virus (MSPV) |
| | <i>Maraba vesiculovirus</i> | Maraba virus (MARAV) |
| | <i>Morreton vesiculovirus</i> | Morreton virus (MORV) |
| | <i>New Jersey vesiculovirus</i> | vesicular stomatitis New Jersey virus (VSNJV) |
| | <i>Perinet vesiculovirus</i> | Perinet virus (PERV) |
| | <i>Piry vesiculovirus</i> | Piry virus (PIRYV) |
| <i>Radi vesiculovirus</i> | Radi virus (RADV) | |
| <i>Yug Bogdanovac vesiculovirus</i> | Yug Bogdanovac virus (YBV) | |

Table 1 (continued)

| Genus | Species [¶] | Virus (Abbreviation) [¶] |
|--------------------------|----------------------------------|--|
| Unassigned | <i>Moussa virus</i> | Moussa virus (MOUV) |
| Family <i>Sunviridae</i> | | |
| <i>Sunshinevirus</i> | <i>Reptile sunshinevirus 1</i> * | Sunshine Coast virus (SunCV) |
| Unassigned | | |
| <i>Anphevirus</i> | <i>Xincheng anphevirus</i> * | Xīnchéng mosquito virus (XcMV) |
| <i>Arlivirus</i> | <i>Lishi arlivirus</i> * | Líshí spider virus 2 (LsSV-2) |
| <i>Chengtivirus</i> | <i>Tacheng chengtivirus</i> * | Tǎchéng tick virus 6 (TcTV-6) |
| <i>Crustavirus</i> | <i>Wenzhou crustavirus</i> * | Wēnzhōu crab virus 1 (WzCV-1) |
| <i>Wastrivirus</i> | <i>Sanxia wastrivirus</i> * | Sānxiá water strider virus 4 (SxWSV-4) |

*Asterisks denote type species. [¶]Please note that viruses are real objects that are assigned to concepts that are called taxa. Species, genera, families, and orders are taxa. Taxon names are always italicized and always begin with a capital letter. Virus names, on the other hand, are not italicized and are not capitalized, except if the name or a name component is a proper noun. This column lists the virus names with their correct (lack of) capitalization

¹Includes: Newcastle disease virus (NDV) and pigeon paramyxovirus 1 (PPMV-1); ²synonym: GH-M74a virus; ³synonym: murine parainfluenza virus 1; ⁴synonym: bat paramyxovirus; ⁵synonym: simian virus 5; ⁶synonym: porcine rubulavirus; ⁷synonyms: avian pneumovirus, turkey rhinotracheitis virus; ⁸synonyms: citrus leprosis virus nuclear type, citrus necrotic spot virus; ⁹synonym: wild boar rhabdovirus 1 (WBRV1); ¹⁰synonyms: Egtved virus, Paralichthys olivaceus rhabdovirus; ¹¹synonym: tobacco stunt virus

Outlook

The taxonomy of viruses of the order *Mononegavirales* remains in flux and additional important changes are likely forthcoming. Indeed, in 2017, two additional taxonomic proposals that would affect the order *Mononegavirales* were debated during the most recent ICTV EC meeting in Singapore. TaxoProp 2017.006M.U.v2.Negarnaviricota proposes

- establishment of a phylum for negative-sense RNA viruses that is subdivided into two subphyla;
- establishment of a sister order to the order *Mononegavirales* to accommodate the recently discovered “chūviruses” [13, 25]; and
- combination of both sister orders in a class assigned to one of the subphyla.

TaxoProp 2017.016M.U.v3.Mononegavirales_rev proposes

- expansion of the family *Myomonaviridae* by 6 species for novel soybean leaf-associated viruses and an invertebrate virus [16, 17, 25];
- transfer of the nyamiviral genus *Peropuvirus* into a new family and expansion of the genus by 6 species for novel invertebrate viruses [13, 25];
- transfer of the free-floating genus *Crustavirus* into the family *Nyamiviridae*; the expansion of *Crustavirus* by two species for novel invertebrate viruses; and the expansion of *Nyamiviridae* by an additional three genera

that include a total of five species for novel invertebrate viruses [13, 25];

- establishment of a new family that absorbs the previously free-floating genus *Anphevirus* and expansion of this genus by six species for novel invertebrate viruses [7, 13, 14, 25]; and
- dissolution of the previously free-floating genera *Chengtivirus* and *Wastrivirus* and transfer of their species into the genus *Arlivirus*, expansion of *Arlivirus* by three new species for novel invertebrate viruses [13, 25], and transfer of this genus into a new family.

These two proposals failed to find unanimous approval at a final ICTV EC vote in fall of 2017 and were deferred to the 2018 ICTV EC meeting, at which a simple majority vote would suffice for approval of the original proposals.

Summary

A summary of the current, ICTV-accepted taxonomy of the order *Mononegavirales* is presented in Table 1.

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Compliance with ethical standards

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the US Department of the Army, the US Department of Defense, the US Department of Health and Human Services, the Department of Homeland Security (DHS) Science and Technology Directorate (S&T), or of the institutions and companies affiliated with the authors. In no event shall any of these entities have any responsibility or liability for any use, misuse, inability to use, or reliance upon the information contained herein. The US departments do not endorse any products or commercial services mentioned in this publication.

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