



Taxonomy of the order *Mononegavirales*: update 2019

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Abstract

In February 2019, following the annual taxon ratification vote, the order *Mononegavirales* was amended by the addition of four new subfamilies and 12 new genera and the creation of 28 novel species. This article presents the updated taxonomy of the order *Mononegavirales* as now accepted by the International Committee on Taxonomy of Viruses (ICTV).

Introduction

The virus order *Mononegavirales* was established in 1991 to accommodate related viruses with nonsegmented, linear, single-stranded, negative-sense RNA genomes classified into three families [20]. According to the previous ratification vote held in October 2018, the order included eight families [10]. Amended/emended order descriptions were published in 1995 [5], 1997 [21], 2000 [22], 2005 [23], 2011 [8], 2016 [1], 2017 [3], March 2018 [4], and October 2018 [15]. Here we present the changes proposed via official ICTV taxonomic proposals that were accepted by the ICTV Executive Committee (EC) in February 2019. Therefore, these changes are now part of the official ICTV taxonomy.

Taxonomic changes at the order rank

No changes were made at the order rank.

Taxonomic changes at the family rank

Artoviridae

No changes were made at the family rank.

Bornaviridae

One new genus, *Cultervirus*, including one new species, *Sharpbelly cultervirus*, was added to the family *Bornaviridae* for classification of Wūhàn sharpbelly bornavirus (WhSBV) discovered in a sharpbelly (*Hemiculter leucisculus*) [29] (TaxoProp 2018.016M.A.v1.Cultervirus.docx).

Filoviridae

The family *Filoviridae* was expanded by the addition of two new genera. The genus *Striavirus* was created to include species *Xilang striavirus* for Xīlǎng virus (XILV; previously “Wēnlǐng frogfish filovirus”) discovered in striated frogfish (*Antennarius striatus*). The genus *Thamnovirus* was created to include species *Huangjiao thamnovirus* for Huángjiāo virus (HUV; previously “Wēnlǐng thamnaconus septentrionalis filovirus”) discovered in a

filefish (*Thamnaconus septentrionalis*) [29] (TaxoProp 2018.015M.A.v1.Filoviridae_2gen).

Lispiviridae

No changes were made at the family rank.

Mymonaviridae

No changes were made at the family rank.

Nyamiviridae

No changes were made at the family rank.

Paramyxoviridae

After a thorough assessment [27], the family *Paramyxoviridae* was comprehensively reorganized (TaxoProp 2018.011M.A.v1.Paramyxoviridae):

- the subfamily *Avulavirinae* was created for three genera (two new [*Metaavulavirus*, *Paraavulavirus*], one renamed [*Avulavirus*→*Orthoavulavirus*]) to accommodate previously classified viruses. All included species names were renamed;
- the subfamily *Metaparamyxovirinae* was created for one new genus (*Synodovirus*) including one new species (*Synodus paramyxovirus*) for Wēnlǐng triplecross lizardfish paramyxovirus (WTLPV) discovered in triplecross lizardfish (*Synodus macrops*) [29];
- the subfamily *Orthoparamyxovirinae* was created for five existing genera (*Aquaparamyxovirus*, *Ferlavirus*, *Henipavirus*, *Morbillivirus*, *Respirovirus*) and three new genera (*Jeilongvirus*, *Narmovirus*, *Salemvirus*). Genus *Respirovirus* was expanded by one species, *Caprine respirovirus 3*, for caprine parainfluenzavirus 3 (CPIV-3) discovered in goats [13, 33]. Genus *Jeilongvirus* includes six novel species: *Beilong jeilongvirus* for Beilong virus (BeiV) discovered in human kidney mesangial cells [14]; *Jun jeilongvirus* for J virus (JV) isolated from house mice (*Mus musculus*) [9, 16]; *Lophuromys jeilongvirus 1* and *2* for Mount Mabu *Lophuromys* virus 1 and 2 (MMLV-1/2) identified in Rungwe brush-furred rats (*Lophuromys machangui*); *Myodes jeilongvirus* for Pohorje *Myodes* paramyxovirus 1 (PMPV-1) identified in bank voles

Table 1 ICTV-accepted taxonomy of the order *Mononegavirales* as of February 2019. Listed are all mononegaviruses that are classified into species

Family/subfamily/genus	Species [¶]	Virus (Abbreviation) [¶]
Family Artoviridae		
<i>Peropovirus</i>	<i>Barnacle peropovirus</i>	Běihǎi barnacle virus 8 (BhBV-8)
	<i>Beihai peropovirus</i>	Běihǎi rhabdo-like virus 1 (BhRLV-1)
	<i>Hubei peropovirus</i>	Húběi rhabdo-like virus 6 (HbRLV-6)
	<i>Odonate peropovirus</i>	Húběi rhabdo-like virus 8 (HbRLV-8)
	<i>Pillworm peropovirus</i>	Húběi rhabdo-like virus 5 (HbRLV-5)
	<i>Pteromalus puparum peropovirus</i> *	Pteromalus puparum negative-strand RNA virus 1 (PpNSRV-1)
	<i>Woodlouse peropovirus</i>	Běihǎi rhabdo-like virus 2 (BhRLV-2)
Family Bornaviridae		
<i>Carbovirus</i>	<i>Queensland carbovirus</i> *	jungle carpet python virus (JCPV)
	<i>Southwest carbovirus</i>	southwest carpet python virus (SWCPV)
<i>Cultervirus</i>	<i>Sharpbelly cultervirus</i> *	Wúhàn sharpbelly bornavirus (WhSBV)
<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>	parrot bornavirus 5 (PaBV-5)	
<i>Waterbird 1 orthobornavirus</i>	aquatic bird bornavirus 1 (ABBV-1)	
	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> *
		Ravn virus (RAVV)
<i>Striavirus</i>	<i>Xilang striavirus</i> *	Xīlǎng virus (XILV)
<i>Thamnovirus</i>	<i>Huangjiao thamnovirus</i> *	Huángjiāo virus (HUJV)
Family Lispiviridae		
<i>Arlivirus</i>	<i>Gerrid arlivirus</i>	Sānxiá water strider virus 4 (SxWSV-4)
	<i>Hubei arlivirus</i>	Húběi rhabdo-like virus 3 (HbRLV-3)
	<i>Lishi arlivirus</i> *	Líshí spider virus 2 (LsSV-2)
	<i>Odonate arlivirus</i>	Húběi odonate virus 10 (HbOV-10)
	<i>Tacheng arlivirus</i>	Tǎchéng tick virus 6 (TcTV-6)
	<i>Wuchang arlivirus</i>	Wúchāng romanomermis nematode virus 2 (WcRNV-2)

Table 1 (continued)

Family/subfamily/genus	Species [¶]	Virus (Abbreviation) [¶]	
Family Mymonaviridae			
<i>Sclerotimonavirus</i>	<i>Dadou sclerotimonavirus</i>	soybean leaf-associated negative-stranded RNA virus 3 (SLaNSRV-3)	
	<i>Drop sclerotimonavirus</i>	Sclerotinia sclerotiorum negative-stranded RNA virus 2 (SsNSRV-2)	
		Sclerotinia sclerotiorum negative-stranded RNA virus 4 (SsNSRV-4)	
	<i>Glycine sclerotimonavirus</i>	Fusarium graminearum negative-stranded RNA virus 1 (FgNSRV-1)	
		soybean leaf-associated negative-stranded RNA virus 1 (SLaNSRV-1)	
	<i>Hubei sclerotimonavirus</i>	Húběi rhabdo-like virus 4 (HbRLV-4)	
	<i>Illinois sclerotimonavirus</i>	soybean leaf-associated negative-stranded RNA virus 2 (SLaNSRV-2)	
	<i>Phyllosphere sclerotimonavirus</i>	soybean leaf-associated negative-stranded RNA virus 4 (SLaNSRV-4)	
	<i>Sclerotinia sclerotimonavirus</i> *	Sclerotinia sclerotiorum negative-stranded RNA virus 1 (SsNSRV-1)	
		Sclerotinia sclerotiorum negative-stranded RNA virus 3 (SsNSRV-3)	
Family Nyamiviridae			
<i>Berhavirus</i>	<i>Beihai berhavirus</i>	Běihǎi rhabdo-like virus 4 (BhRLV-4)	
	<i>Echinoderm berhavirus</i>	Běihǎi rhabdo-like virus 5 (BhRLV-5)	
	<i>Sipunculid berhavirus</i> *	Běihǎi rhabdo-like virus 3 (BhRLV-3)	
<i>Crustavirus</i>	<i>Beihai crustavirus</i>	Běihǎi rhabdo-like virus 6 (BhRLV-6)	
	<i>Wenling crustavirus</i>	Wěnlǐng crustacean virus 12 (WICV-12)	
	<i>Wenzhou crustavirus</i> *	Wěnzhōu crab virus 1 (WzCV-1)	
<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>Orinovirus</i>	<i>Orinoco orinovirus</i> *	Orinoco virus (ONCV)	
<i>Socycivirus</i>	<i>Soybean cyst nematode socycivirus</i> *	soybean cyst nematode virus 1 (SbCNV-1)	
<i>Tapwovirus</i>	<i>Tapeworm tapwovirus</i> *	Wěnzhōu tapeworm virus 1 (WzTWV-1)	
Family Paramyxoviridae			
Subfamily <i>Avulavirinae</i>			
<i>Metaavulavirus</i>	<i>Avian metaavulavirus 2</i> *	avian paramyxovirus 2 (APMV-2)	
	<i>Avian metaavulavirus 5</i>	avian paramyxovirus 5 (APMV-5)	
	<i>Avian metaavulavirus 6</i>	avian paramyxovirus 6 (APMV-6)	
	<i>Avian metaavulavirus 7</i>	avian paramyxovirus 7 (APMV-7)	
	<i>Avian metaavulavirus 8</i>	avian paramyxovirus 8 (APMV-8)	
	<i>Avian metaavulavirus 10</i>	avian paramyxovirus 10 (APMV-10)	
	<i>Avian metaavulavirus 11</i>	avian paramyxovirus 11 (APMV-11)	
	<i>Avian metaavulavirus 14</i>	avian paramyxovirus 14 (APMV-14)	
	<i>Avian metaavulavirus 15</i>	avian paramyxovirus 15 (APMV-15)	
	<i>Avian metaavulavirus 20</i>	avian paramyxovirus 20 (APMV-20)	
	<i>Orthoavulavirus</i>	<i>Avian orthoavulavirus 1</i> *	avian paramyxovirus 1 (APMV-1) ¹
		<i>Avian orthoavulavirus 9</i>	avian paramyxovirus 9 (APMV-9)
		<i>Avian orthoavulavirus 12</i>	avian paramyxovirus 12 (APMV-12)
<i>Avian orthoavulavirus 13</i>		avian paramyxovirus 13 (APMV-13)	
<i>Avian orthoavulavirus 16</i>		avian paramyxovirus 16 (APMV-16)	
	<i>Avian orthoavulavirus 17</i>	Antarctic penguin virus A (APV-A)	

Table 1 (continued)

Family/subfamily/genus	Species [¶]	Virus (Abbreviation) [¶]
<i>Paraavulavirus</i>	<i>Avian orthoavulavirus 18</i>	Antarctic penguin virus B (APV-B)
	<i>Avian orthoavulavirus 19</i>	Antarctic penguin virus C (APV-C)
	<i>Avian paraavulavirus 3*</i>	avian paramyxovirus 3 (APMV-3)
	<i>Avian paraavulavirus 4</i>	avian paramyxovirus 4 (APMV-4)
Subfamily <i>Metaparamyxovirinae</i>		
<i>Synodovirus</i>	<i>Synodus paramyxovirus</i> ^{*2}	Wēnlǐng triplecross lizardfish paramyxovirus (WTLPV)
Subfamily <i>Orthoparamyxovirinae</i>		
<i>Aquaparamyxovirus</i>	<i>Salmon aquaparamyxovirus</i> [*]	Atlantic salmon paramyxovirus (AsaPV)
<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>	Ghana virus (GhV)
	<i>Hendra henipavirus</i> [*]	Hendra virus (HeV)
	<i>Mojiang henipavirus</i>	Mòjiāng virus (MojV)
	<i>Nipah henipavirus</i>	Nipah virus (NiV)
	<i>Jeilongvirus</i>	<i>Beilong jeilongvirus</i> [*]
<i>Jun jeilongvirus</i>		J virus (JV)
<i>Lophuromys jeilongvirus 1</i>		Mount Mabu Lophuromys virus 1 (MMLV-1)
<i>Lophuromys jeilongvirus 2</i>		Mount Mabu Lophuromys virus 2 (MMLV-2)
<i>Myodes jeilongvirus</i>		Pohorje Myodes paramyxovirus 1 (PMPV-1)
<i>Tailam jeilongvirus</i>		Tailam virus (TaiV)
<i>Morbillivirus</i>		<i>Canine morbillivirus</i>
	<i>Cetacean morbillivirus</i>	cetacean morbillivirus (CeMV)
	<i>Feline morbillivirus</i>	feline morbillivirus (FeMV)
	<i>Measles morbillivirus</i> [*]	measles virus (MeV)
	<i>Phocine morbillivirus</i>	phocine distemper virus (PDV)
	<i>Rinderpest morbillivirus</i>	rinderpest virus (RPV)
	<i>Small ruminant morbillivirus</i>	peste-des-petits-ruminants virus (PPRV)
<i>Narmovirus</i>	<i>Mossman narmovirus</i>	Mossman virus (MossV)
	<i>Myodes narmovirus</i>	bank vole virus 1 (BaV-1)
	<i>Nariva narmovirus</i> [*]	Nariva virus (NarV)
	<i>Tupaia narmovirus</i>	Tupaia paramyxovirus (TupV)
<i>Respirovirus</i>	<i>Bovine respirovirus 3</i>	bovine parainfluenza virus 3 (BPIV-3)
	<i>Caprine respirovirus 3</i>	caprine parainfluenzavirus 3 (CPIV-3)
	<i>Human respirovirus 1</i>	human parainfluenza virus 1 (HPIV-1)
	<i>Human respirovirus 3</i>	human parainfluenza virus 3 (HPIV-3)
	<i>Murine respirovirus</i> [*]	Sendai virus (SeV)
	<i>Porcine respirovirus 1</i>	porcine parainfluenza virus 1 (PPIV-1)
<i>Salemvirus</i>	<i>Salem salemvirus</i> [*]	Salem virus (SalV)
Subfamily <i>Rubulavirinae</i>		
<i>Orthorubulavirus</i>	<i>Bat mumps orthorubulavirus</i> ³	bat mumps virus (BMV)
	<i>Human orthorubulavirus 2</i>	human parainfluenza virus 2 (HPIV-2)
	<i>Human orthorubulavirus 4</i>	human parainfluenza virus 4a (HPIV-4a)
		human parainfluenza virus 4b (HPIV-4b)
	<i>Mammalian orthorubulavirus 5</i>	parainfluenza virus 5 (PIV-5)
	<i>Mapuera orthorubulavirus</i>	Mapuera virus (MapV)
	<i>Mumps orthorubulavirus</i> [*]	mumps virus (MuV)
<i>Pararubulavirus</i>	<i>Porcine orthorubulavirus</i>	La Piedad Michoacán Mexico virus (LPMV)
	<i>Simian orthorubulavirus</i>	simian virus 41 (SV-41)
	<i>Achimota pararubulavirus 1</i>	Achimota virus 1 (AchPV-1)

Table 1 (continued)

Family/subfamily/genus	Species [¶]	Virus (Abbreviation) [¶]
	<i>Achimota pararubulavirus 2</i>	Achimota virus 2 (AchPV-2)
	<i>Menangle pararubulavirus*</i>	Menangle virus (MenPV)
	<i>Sosuga pararubulavirus</i>	Sosuga virus (SOSV)
	<i>Teviot pararubulavirus</i>	Teviot virus (TevPV)
	<i>Tioman pararubulavirus</i>	Tioman virus (TioPV)
	<i>Tuhoko pararubulavirus 1</i>	Tuhoko virus 1 (ThkPV-1)
	<i>Tuhoko pararubulavirus 2</i>	Tuhoko virus 2 (ThkPV-2)
	<i>Tuhoko pararubulavirus 3</i>	Tuhoko virus 3 (ThkPV-3)
Unassigned		
Unassigned	<i>Cynoglossus paramyxovirus</i>	Wēnlíng tonguesole paramyxovirus (WTSPV)
Unassigned	<i>Hoplichthys paramyxovirus</i>	Wēnlíng hoplichthys paramyxovirus (WHPV)
Unassigned	<i>Scoliodon paramyxovirus</i>	Wēnzhōu pacific spadenose shark paramyxovirus (WPSSPV)
Family Pneumoviridae		
<i>Metapneumovirus</i>	<i>Avian metapneumovirus*</i>	avian metapneumovirus (AMPV)
	<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 (HRSV)
	<i>Murine orthopneumovirus</i>	murine pneumonia virus (MPV)
Family Rhabdoviridae		
<i>Almendravirus</i>	<i>Arboretum almendravirus</i>	Arboretum virus (ABTV)
	<i>Balsa almendravirus</i>	Balsa virus (BALV)
	<i>Coot Bay almendravirus</i>	Coot Bay virus (CBV)
	<i>Puerto Almendras almendravirus*</i>	Puerto Almendras virus (PTAMV)
	<i>Rio Chico almendravirus</i>	Rio Chico virus (RCHV)
<i>Alphanemrhavirus</i>	<i>Xingshan alphanemrhavirus*</i>	Xingshan nematode virus 4 (XsNV-4)
	<i>Xinzhou alphanemrhavirus</i>	Xinzhou nematode virus 4 (XzNV-4)
<i>Calighravivirus</i>	<i>Caligus calighravivirus</i>	Caligus rogercresseyi rhabdovirus (CRogRV)
	<i>Lepeophtheirus calighravivirus*</i>	Lepeophtheirus salmonis rhabdovirus 127 (LSalRV-127)
	<i>Salmonlouse calighravivirus</i>	Lepeophtheirus salmonis rhabdovirus 9 (LSalRV-9)
<i>Curiovirus</i>	<i>Curionopolis curiovirus*</i>	Curionopolis virus (CURV)
	<i>Irii curiovirus</i>	Irii 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>Citrus chlorotic spot dichorhavirus</i>	citrus chlorotic spot virus (CiCSV)
	<i>Citrus leprosis N dichorhavirus</i>	citrus leprosis virus N (CiLV-N)
	<i>Clerodendrum chlorotic spot dichorhavirus</i>	clerodendrum chlorotic spot virus (CICSV)

Table 1 (continued)

Family/subfamily/genus	Species [¶]	Virus (Abbreviation) [¶]	
<i>Ephemerovirus</i>	<i>Coffee ringspot dichorhavirus</i>	coffee ringspot virus (CoRSV)	
	<i>Orchid fleck dichorhavirus</i> *	orchid fleck virus (OFV)	
	<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>Hapavirus</i>	<i>Yata ephemerovirus</i>	Yata virus (YATV)	
	<i>Flanders hapavirus</i> *	Flanders virus (FLAV)	
	<i>Gray Lodge hapavirus</i>	Gray Lodge virus (GLOV)	
	<i>Hart Park hapavirus</i>	Hart Park virus (HPV)	
	<i>Joinjakaka hapavirus</i>	Joinjakaka virus (JOIV)	
	<i>Kamese hapavirus</i>	Kamese virus (KAMV)	
	<i>La Joya hapavirus</i>	La Joya virus (LJV)	
	<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)	
	<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>Ledantevirus</i>	<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>Nishimuro ledantevirus</i>		Nishimuro virus (NISV)	
<i>Nkolbisson ledantevirus</i>		Nkolbisson virus (NKOV)	
<i>Oita ledantevirus</i>		Oita virus (OITAV)	
<i>Vaprio ledantevirus</i>		Vaprio virus (VAPV)	
<i>Wuhan ledantevirus</i>		Wuhan louse fly virus 5 (WLFV-5)	
<i>Yongjia ledantevirus</i>	Yongjia 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)	

Table 1 (continued)

Family/subfamily/genus	Species [¶]	Virus (Abbreviation) [¶]
	<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 lyssavirus (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>	hirame rhabdovirus (HIRRV = HIRV)
	<i>Piscine novirhabdovirus</i>	viral hemorrhagic septicemia virus (VHSV)
	<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)
	<i>Sowthistle yellow vein nucleorhabdovirus</i>	sowthistle yellow vein virus (SYVV)
	<i>Taro vein chlorosis nucleorhabdovirus</i>	taro vein chlorosis virus (TaVVCV)
<i>Perhabdovirus</i>	<i>Anguillid perhabdovirus</i>	eel virus European X (EVEX)
	<i>Perch perhabdovirus*</i>	perch rhabdovirus (PRV)
	<i>Sea trout perhabdovirus</i>	lake trout rhabdovirus (LTRV)
<i>Sigmavirus</i>	<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 (DTrisSV)
	<i>Muscina stabulans sigmavirus</i>	<i>Muscina stabulans</i> sigmavirus (MStaSV)
<i>Sprivivirus</i>	<i>Carp sprivivirus*</i>	spring viremia of carp virus (SVCV)
	<i>Pike fry sprivivirus</i>	grass carp rhabdovirus (GrCRV)
		pike fry rhabdovirus (PFRV)
		tench rhabdovirus (TenRV)
<i>Sripuvirus</i>	<i>Almpiwar sripuvirus</i>	Almpiwar virus (ALMV)
	<i>Chaco sripuvirus</i>	Chaco virus (CHOV)
	<i>Niakha sripuvirus*</i>	Niakha virus (NIAV)
	<i>Sena Madureira sripuvirus</i>	Sena Madureira virus (SMV)
	<i>Sripur sripuvirus</i>	Sripur virus (SRIV)
<i>Tibrovirus</i>	<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>Sweetwater Branch tibrovirus</i>	Sweetwater Branch virus (SWBV)
	<i>Tibrogargan tibrovirus*</i>	Bivens Arm virus (BAV)
		Tibrogargan virus (TIBV)

Table 1 (continued)

Family/subfamily/genus	Species [¶]	Virus (Abbreviation) [¶]
<i>Tupavirus</i>	<i>Durham tupavirus</i> *	Durham virus (DURV)
	<i>Klamath tupavirus</i>	Klamath virus (KLAV)
	<i>Tupaia tupavirus</i>	tupaia virus (TUPV)
<i>Varicosavirus</i>	<i>Lettuce big-vein associated varicosavirus</i> *	lettuce big-vein associated virus (LBVaV)
<i>Vesiculovirus</i>	<i>Alagoas vesiculovirus</i>	vesicular stomatitis Alagoas virus (VSAV)
	<i>American bat vesiculovirus</i>	American bat vesiculovirus (ABVV)
	<i>Carajas vesiculovirus</i>	Carajas 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)
Unassigned	<i>Moussa virus</i>	Moussa virus (MOUV)
Family Sunviridae		
<i>Sunshinevirus</i>	<i>Reptile sunshinevirus 1</i> *	Sunshine Coast virus (SunCV)
Family Xinmoviridae		
<i>Anphevirus</i>	<i>Bolahun anphevirus</i>	Bolahun virus (BLHV) Gambie virus (GAMV)
	<i>Dipteran anphevirus</i>	Húběi diptera virus 11 (HbDV-11)
	<i>Drosophilid anphevirus</i>	Drosophila unispina virus 1 (DuniV-1)
	<i>Odonate anphevirus</i>	Húběi rhabdo-like virus 7 (HbRLV-7)
	<i>Orthopteran anphevirus</i>	Húběi orthoptera virus 5 (HbOV-5)
	<i>Shuangào anphevirus</i>	Shuangào fly virus 2 (SgFV-2)
	<i>Xincheng anphevirus</i> *	Xīnchéng mosquito virus (XcMV)

*Type species

¹Includes Newcastle disease virus (NDV). ²Due to a formal classification mistake, this species was incorrectly named *Synodus paramyxovirus* in 2019. A proposal to change the species name to the correct “*Synodus synodovirus*” will be submitted prior to the next taxonomic proposal submission deadline. ³Due to a formal classification mistake, the species *Bat mumps orthorubulavirus* was not abolished as outlined in the original proposal to reorganize the family *Paramyxoviridae*. A proposal to abolish this species will be submitted prior to the next taxonomic proposal submission deadline

[¶]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. Lists of viruses within a given species are provisional at this point and will likely be amended in the near future

(*Myodes glareolus*) [31]; and *Tailam jeilongvirus* for Tailam virus (TaiV) isolated from Indochinese forest rats (*Rattus andamanensis*) [32]. Genus *Narmovirus* includes four new species: *Mossman narmovirus* for Mossman virus (MossV) isolated from *Rattus* rats [6, 17]; *Myodes narmovirus* for bank vole virus 1 (BaV-1) detected in bank voles (*Myodes glareolus*) [2]; *Nariva narmovirus*

for Nariva virus (NarV) discovered in short-tailed zygodonts (*Zygodontomys brevicauda*) [11, 30]; and *Tupaia narmovirus* for Tupaia paramyxovirus (TupV) isolated from northern treeshrews (*Tupaia belangeri*). Genus *Salemvirus* includes the species *Salem salemvirus* for Salem virus (SalV) isolated from horses [26].

- the subfamily *Rubulavirinae* was created for two genera (one new [*Pararubulavirus*], one renamed [*Rubulavirus* → *Orthorubulavirus*]) to accommodate previously classified rubulaviruses. All included species names were renamed; and
- three unassigned species were created in the family: *Cynoglossus paramyxovirus* for Wēnlǐng tonguesole paramyxovirus (WTSPV) discovered in a tonguesole (*Cynoglossus* sp.); *Hoplichthys paramyxovirus* for Wēnlǐng hoplichthys paramyxovirus (WHPV) identified in a flathead (*Hoplichthys* sp.); and *Scoliodon paramyxovirus* for Wēnzhōu pacific spadenose shark paramyxovirus (WPSSPV) discovered in a Pacific spadenose shark (*Scoliodon macrorhynchus*) [29].

Pneumoviridae

No changes were made at the family rank.

Rhabdoviridae

The family *Rhabdoviridae* was expanded by the addition of two new genera. Genus *Alphanemrhavirus* was created to include two new species, *Xingshan alphanemrhavirus* and *Xinzhou alphanemrhavirus*, for Xingshan nematode virus 4 (XsNV-4) and Xinzhou nematode virus 4 (XzNV-4), respectively [28] (TaxoProp 2018.001M.A.v1.Alphanemrhavirus). Genus *Caligrhavirus* was created to include three new species, *Caligus caligrhavirus*, *Lepeophtheirus caligrhavirus*, and *Salmonlouse caligrhavirus* for *Caligus rogercresseyi* rhabdovirus (CRoRV) detected in a copepod (*Caligus rogercresseyi*) [19], *Lepeophtheirus salmonis* rhabdovirus 127 (LSalRV-127), and *Lepeophtheirus salmonis* rhabdovirus 9 (LSalRV-9), both identified in salmon lice (*Lepeophtheirus salmonis*) [18], respectively (2018.002M.A.v1.Caligrhavirus).

The genus *Dichorhavirus* was expanded by three species: *Citrus chlorotic spot dichorhavirus*, *Citrus leprosis N dichorhavirus*, and *Clerodendrum chlorotic spot dichorhavirus* for citrus chlorotic spot virus (CiCSV) discovered in sweet orange trees [7], citrus leprosis virus N (CiLV-N) also found in sweet orange trees [24], and *Clerodendrum chlorotic spot virus* (CiCSV) discovered in an ornamental plant (*Clerodendrum* sp.) [25], respectively (2018.003M.A.v1.Dichorhavirus_3sp).

One new species, *Vaprio ledantevirus*, was added to genus *Ledantevirus*, for *Vaprio virus* (VAPV) of Kuhl's pipistrelles (*Pipistrellus kuhlii*) [12] (2018.004M.A.v1.Ledantevirus_sp).

Sunviridae

No changes were made at the family rank.

Xinmoviridae

No changes were made at the family rank.

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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