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## 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).

### Keywords

artovirid; *Artoviridae*; artovirus; bornavirid; *Bornaviridae*; bornavirus; filovirid; *Filoviridae*; filovirus; ICTV; International Committee on Taxonomy of Viruses; lispivirid; *Lispiviridae*; lispivirus; mononegavirad; *Mononegavirales*; mononegavirus; mymonavirid; *Mymonaviridae*; mymonavirus; nyamivirid; *Nyamiviridae*; nyamivirus; paramyxovirid; *Paramyxoviridae*; paramyxovirus; pneumovirid; *Pneumoviridae*; pneumovirus; rhabdovirid; *Rhabdoviridae*; rhabdovirus; sunvirid; *Sunviridae*; sunvirus; virus classification; virus nomenclature; virus taxonomy; xinmovirid; *Xinmoviridae*; xinmovirus

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Conflict of interest

The authors declare no conflicts of interest.

Ethical approval

This article does not contain any studies with human participants or animals performed by any of the authors.

## 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 that were 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 X lǎng virus (XILV; previously “W nǐng frogfish filovirus”) discovered in striated frogfish (*Antennarius striatus*). The genus *Thamnovirus* was created to include species *Huangjiao thamnovirus* for Huángji o virus (HUJV; previously “W nǐng thamnaconus septentrionalis”) 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 W nling 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*) and *Myodes jeilongvirus* for Pohorje Myodes paramyxovirus 1 (PMPV-1) identified in bank voles (*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 W nling tonguesole paramyxovirus (WTSPV) discovered in a tonguesole (*Cynoglossus* sp.); *Hoplichthys paramyxovirus* for W nling hoplichthys paramyxovirus (WHPV) identified in a flathead (*Hoplichthys* sp.); and *Scoliodon paramyxovirus* for W nzhu pacific spadenose shark paramyxovirus (WPSSPV) discovered in a Pacific spadenose shark (*Scoliodon macrorhynchos*) [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 *Calighavirus* was created to include three new species, *Caligus calighavirus*, *Lepeophtheirus calighavirus*, and *Salmonlouse calighavirus* 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.Calighavirus).

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 ledantavirus*, was added to genus *Ledantavirus*, for *Vaprio* virus (VAPV) of Kuhl's pipistrelles (*Pipistrellus kuhlii*) [12] (2018.004M.A.v1.Ledantavirus\_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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ICTV-accepted taxonomy of the order *Mononegavirales* as of February 2019. Listed are all mononegaviruses that are classified into species.

Table 1

Genus	Species <sup>†</sup>	Virus (Abbreviation) <sup>‡</sup>
<b>Family <i>Artoviridae</i></b>		
<i>Peropuvirus</i>	<i>Barnacle peropuvirus</i>	B ihai barnacle virus 8 (BhBV-8)
	<i>Beihai peropuvirus</i>	B ihai rhabdo-like virus 1 (BhRLV-1)
	<i>Hubei peropuvirus</i>	Hüb i rhabdo-like virus 6 (HbRLV-6)
	<i>Odonate peropuvirus</i>	Hüb i rhabdo-like virus 8 (HbRLV-8)
	<i>Pillworm peropuvirus</i>	Hüb i rhabdo-like virus 5 (HbRLV-5)
	<i>Pteromalus puparum peropuvirus</i> *	Pteromalus puparum negative-strand RNA virus 1 (PpNSRV-1)
	<i>Woodlouse peropuvirus</i>	B ihai rhabdo-like virus 2 (BhRLV-2)
<b>Family <i>Bornaviridae</i></b>		
<i>Carthovirus</i>	<i>Queensland carthovirus</i> *	jungle carpet python virus (JCPV)
	<i>Southwest carthovirus</i>	southwest carpet python virus (SWCPV)
<i>Cultivirus</i>	<i>Sharpbelly cultivirus</i> *	Wühàn 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)
	<i>Mammalian 2 orthobornavirus</i>	Borna disease virus 2 (BoDV-2)
	<i>Passeriform 1 orthobornavirus</i>	variegated squirrel bornavirus 1 (VSBV-1)
		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)
	<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)

Genus	Species <sup>†</sup>	Virus (Abbreviation) <sup>‡</sup>
<b>Family Filoviridae</b>		
<i>Cuevavirus</i>	<i>Llovitu cuevavirus</i> *	Llovitu virus (LLOV)
<i>Ebolavirus</i>	<i>Bundibugyo ebolavirus</i>	Bundibugyo virus (BDBY)
	<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)
<i>Striavirus</i>	<i>Xilang striavirus</i> *	Xilang virus (XILV)
<i>Thannovirus</i>	<i>Huangjiao thannovirus</i> *	Huangjiao virus (HUJV)
<b>Family Lispiviridae</b>		
<i>Arivirus</i>	<i>Gerrid arivirus</i>	Sixia water strider virus 4 (SxWSV-4)
	<i>Hubei arivirus</i>	Hubei rhabdo-like virus 3 (HBRLV-3)
	<i>Lishi arivirus</i> *	Lishi spider virus 2 (LSV-2)
	<i>Odonate arivirus</i>	Hubei odonate virus 10 (HBOV-10)
	<i>Tacheng arivirus</i>	Tacheng tick virus 6 (TcTV-6)
	<i>Wuchang arivirus</i>	Wuchang romanomermis nematode virus 2 (WeRNV-2)
<b>Family Mymonaviridae</b>		
<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>	Hubei rhabdo-like virus 4 (HBRLV-4)
	<i>Illinois sclerotimonavirus</i>	soybean leaf-associated negative-stranded RNA virus 2 (L.SaNSRV-2)
	<i>Phyllosphere sclerotimonavirus</i>	soybean leaf-associated negative-stranded RNA virus 4 (L.SaNSRV-4)
	<i>Sclerotinia sclerotimonavirus</i> *	Sclerotinia sclerotiorum negative-stranded RNA virus 1 (SsNSRV-1)
		Sclerotinia sclerotiorum negative-stranded RNA virus 3 (SsNSRV-3)
<b>Family Nyamiviridae</b>		

Genus	Species <sup>†</sup>	Virus (Abbreviation) <sup>‡</sup>	
<i>Berhavirus</i>	<i>Beihai berhavirus</i>	B ihai rhabdo-like virus 4 (BhRLV-4)	
	<i>Echinoderm berhavirus</i>	B ihai rhabdo-like virus 5 (BhRLV-5)	
	<i>Sipunculid berhavirus</i> *	B ihai rhabdo-like virus 3 (BhRLV-3)	
<i>Crustavirus</i>	<i>Beihai crustavirus</i>	B ihai rhabdo-like virus 6 (BhRLV-6)	
	<i>Wenling crustavirus</i>	W nling crustacean virus 12 (WICV-12)	
<i>Nyavirus</i>	<i>Wenzhou crustavirus</i> *	W nzh u crab virus 1 (WzCV-1)	
	<i>Midway nyavirus</i>	Midway virus (MIDWV)	
	<i>Nyamamini nyavirus</i> *	Nyamamini virus (NYMV)	
<i>Orinovirus</i>	<i>Sierra Nevada nyavirus</i>	Sierra Nevada virus (SNVV)	
<i>Socycivirus</i>	<i>Orinoco orinovirus</i> *	Orinoco virus (ONCV)	
<i>Tapewormvirus</i>	<i>Soybean cyst nematode socycivirus</i> *	soybean cyst nematode virus 1 (SbCNAV-1)	
	<i>Tapeworm tapewormvirus</i> *	W nzh u tapeworm virus 1 (WzTWV-1)	
<b>Family Paramyxoviridae</b>			
	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)
		<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)

Genus	Species <sup>†</sup>	Virus (Abbreviation) <sup>‡</sup>
<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)
<i>Synodovirus</i>		Subfamily <i>Metaparamyxovirinae</i>
	<i>Synodus paramyxovirus</i> <sup>#2</sup>	W nling triplecross lizardfish paramyxovirus (WTLPV)
<i>Aquaparamyxovirus</i>		Subfamily <i>Orthoparamyxovirinae</i>
	<i>Salmon aquaparamyxovirus*</i>	Atlantic salmon paramyxovirus (AsaPV)
	<i>Reptilian ferlavirus*</i>	fer-de-lance virus (FDLV)
	<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>	Mojiang virus (MoJV)
	<i>Nipah henipavirus</i>	Nipah virus (NiV)
	<i>Beilong jeilongvirus*</i>	Beilong virus (BeiV)
	<i>Jun jeilongvirus</i>	J virus (JV)
<i>Morbilivirus</i>	<i>Lophuronyx jeilongvirus 1</i>	Mount Mabu Lophuronyx virus 1 (MMLV-1)
	<i>Lophuronyx jeilongvirus 2</i>	Mount Mabu Lophuronyx virus 2 (MMLV-2)
	<i>Myodes jeilongvirus</i>	Pohorje Myodes paramyxovirus 1 (PMPV-1)
	<i>Tailam jeilongvirus</i>	Tailam virus (TaiV)
	<i>Canine morbillivirus</i>	canine distemper virus (CDV)
<i>Narmovirus</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>	pesto-des-petits-ruminants virus (PPRV)
	<i>Mossman narmovirus</i>	Mossman virus (MossV)
	<i>Myodes narmovirus</i>	bank vole virus 1 (BaV-1)
	<i>Nariva narmovirus*</i>	Nariva virus (NarV)



Genus	Species <sup>†</sup>	Virus (Abbreviation) <sup>‡</sup>	
Respirovirus	<i>Tupaia narmovirus</i>	Tupaia paramyxovirus (TupV)	
	<i>Bovine respirovirus 3</i>	bovine parainfluenza virus 3 (BPIV-3)	
	<i>Caprine respirovirus 3</i>	caprine parainfluenza virus 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>Salem salemvirus*</i>	Salem virus (SalV)	
	Orthorubulavirus	Subfamily <i>Rubulavirinae</i>	
		<i>Bat mumps orthorubulavirus 3</i>	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>Porcine orthorubulavirus</i>		La Piedad Michoacán Mexico virus (LPMV)	
<i>Simian orthorubulavirus</i>		simian virus 41 (SV-41)	
Pararubulavirus	<i>Achimota pararubulavirus 1</i>	Achimota virus 1 (AchPV-1)	
	<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>	W nling tonguesole paramyxovirus (WTSPV)	
Unassigned	<i>Hoplichthys paramyxovirus</i>	W nling hoplichthys paramyxovirus (WHPV)	

Genus	Species <sup>†</sup>	Virus (Abbreviation) <sup>‡</sup>
Unassigned	<i>Scoliodon paramyxovirus</i>	W nzh u pacific spadenose shark paramyxovirus (WPSSPV)
<b>Family Pneumoviridae</b>		
<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)
<b>Family Rhabdoviridae</b>		
<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>Alphanemhavirus</i>	<i>Xingshan alphanemhavirus</i> *	Xingshan nematode virus 4 (XsNV-4)
	<i>Xinzhou alphanemhavirus</i>	Xinzhou nematode virus 4 (XzNV-4)
<i>Caligtrhavirus</i>	<i>Caligus caligtrhavirus</i>	Caligus rogerresseyi rhabdovirus (CRoRV)
	<i>Lepeophtheirus caligtrhavirus</i> *	Lepeophtheirus salmonis rhabdovirus 127 (L.SaIRV-127)
	<i>Salmonlouse caligtrhavirus</i>	Lepeophtheirus salmonis rhabdovirus 9 (L.SaIRV-9)
<i>Curiovirus</i>	<i>Curionopolis curiovirus</i> *	Curionopolis virus (CURV)
	<i>Iriti curiovirus</i>	Iriti virus (IRIRV)
	<i>Itacaunas curiovirus</i>	Itacaunas 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)

Genus	Species <sup>†</sup>	Virus (Abbreviation) <sup>‡</sup>
<i>Dichorhavirus</i>	<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>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)
	<i>Coffee ringspot dichorhavirus</i>	coffee ringspot virus (CoRSV)
<i>Ephemerovirus</i>	<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 (OBON)
	<i>Yata ephemerovirus</i>	Yata virus (YATV)
<i>Hapavirus</i>	<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>Joiinjakaka hapavirus</i>	Joiinjakaka 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)

Genus	Species <sup>†</sup>	Virus (Abbreviation) <sup>‡</sup>
	<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>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>Ikona lyssavirus</i>	Ikona lyssavirus (IKOV)

Genus	Species <sup>†</sup>	Virus (Abbreviation) <sup>‡</sup>
	<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 (LLEBY)
	<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 septicaemia 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)

Genus	Species <sup>†</sup>	Virus (Abbreviation) <sup>‡</sup>
<i>Sigmavirus</i>	<i>Sea trout perhabdovirus</i>	lake trout rhabdovirus (LTRV)
	<i>Drosophila affinis sigmavirus</i>	Drosophila affinis sigmavirus (DAffSV)
	<i>Drosophila ananassae sigmavirus</i>	Drosophila ananassae sigmavirus (DAAnaSV)
	<i>Drosophila immigrans sigmavirus</i>	Drosophila immigrans sigmavirus (DIImmSV)
	<i>Drosophila melanogaster sigmavirus</i> *	*Drosophila melanogaster sigmavirus (DMelSV)
	<i>Drosophila obscura sigmavirus</i>	Drosophila obscura sigmavirus (DObsSV)
	<i>Drosophila tristis sigmavirus</i>	Drosophila tristis sigmavirus (DTrisSV)
	<i>Muscina stabulans sigmavirus</i>	Muscina stabulans sigmavirus (MStiaSV)
	<i>Carp sprivivirus</i> *	spring viremia of carp virus (SVCV)
	<i>Pike fry sprivivirus</i>	grass carp rhabdovirus (GrCRV)
<i>Sripuvirus</i>	<i>Almipiwar sripuvirus</i>	pike fry rhabdovirus (PFRV)
	<i>Chaco sripuvirus</i>	tench rhabdovirus (TenRV)
	<i>Niakha sripuvirus</i> *	Almipiwar virus (ALMV)
	<i>Sena Madureira sripuvirus</i>	Chaco virus (CHOV)
	<i>Sripur sripuvirus</i>	Niakha virus (NIAV)
	<i>Bas Congo tibrovirus</i>	Sena Madureira virus (SMV)
	<i>Beatrice Hill tibrovirus</i>	Sripur virus (SRIV)
	<i>Coastal Plains tibrovirus</i>	Bas-Congo virus (BASV)
	<i>Ekpoma 1 tibrovirus</i>	Beatrice Hill virus (BHV)
	<i>Ekpoma 2 tibrovirus</i>	Coastal Plains virus (CPV)
<i>Tupavirus</i>	<i>Sweetwater Branch tibrovirus</i>	Ekpoma virus 1 (EKV-1)
	<i>Tibrogagan tibrovirus</i> *	Ekpoma virus 2 (EKV-2)
	<i>Durham tupavirus</i> *	Sweetwater Branch virus (SWBV)
	<i>Klamath tupavirus</i>	Bivens Arm virus (BAV)
	<i>Tupaia tupavirus</i>	Tibrogagan virus (TIBV)
	<i>Lettuce big-vein associated varicosavirus</i> *	Durham virus (DURV)
	<i>Alagoas vesiculovirus</i>	Klamath virus (KLAV)
		tupaia virus (TUPV)
		lettuce big-vein associated virus (LBVaV)
		vesicular stomatitis Alagoas virus (VSAV)



Genus	Species <sup>†</sup>	Virus (Abbreviation) <sup>‡</sup>
	<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 (VSVI)
	<i>Isfahan vesiculovirus</i>	Isfahan virus (ISFV)
	<i>Jurona vesiculovirus</i>	Jurona virus (JURY)
	<i>Malpais Spring vesiculovirus</i>	Malpais Spring virus (MSPV)
	<i>Maraba vesiculovirus</i>	Maraba virus (MARAV)
	<i>Morretton vesiculovirus</i>	Morretton 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)
<b>Family Sunviridae</b>		
<i>Sunshinevirus</i>	<i>Reptile sunshinevirus I</i> *	Sunshine Coast virus (SunCV)
<b>Family Xinmoviridae</b>		
<i>Anphevirus</i>	<i>Bolahun anphevirus</i>	Bolahun virus (BLHV)
		Gambie virus (GAMV)
	<i>Dipteran anphevirus</i>	Hüb i diptera virus 11 (HbDV-11)
	<i>Drosophilid anphevirus</i>	Drosophila unispina virus 1 (DumV-1)
	<i>Odonate anphevirus</i>	Hüb i rhabdo-like virus 7 (HbRLV-7)
	<i>Orthopteran anphevirus</i>	Hüb i orthoptera virus 5 (HbOV-5)
	<i>Shuangao anphevirus</i>	Shu ngào fly virus 2 (SgFV-2)
	<i>Xincheng anphevirus</i> *	X nchéng mosquito virus (XcMV)

\* type species

<sup>†</sup> includes Newcastle disease virus (NDV).

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<sup>2</sup>Due 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 synodomyxovirus*“ will be submitted prior to the next taxonomic proposal submission deadline.

<sup>3</sup>Due 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.

<sup>4</sup>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.