

List of the main “giant” viruses known as of today (April, 18th, 2018)

(complete genomes only)(unpublished in green)(largest genome among their group in red)

Family	Prototype	Virion type	Dimension	Genome, size, GC%	Specific feature	Host
Mimiviridae		Icosahedral		Linear DNA	MutS, Virophage	Acanthamoeba
Megavirinae					Long fibers	
Clade A	Mimivirus	Icosahedral	500+250 nm	1.18 Mb, 28%	4 AaRS	Acanthamoeba
Clade B	Moumouvirus	Icosahedral	420+200 nm	1.02 Mb, 25%	5 AaRS	Acanthamoeba
Clade C	Megavirus chilensis	Icosahedral	520+150 nm	1.26 Mb, 25%	7 AaRS	Acanthamoeba
Clade ?	Tupanvirus soda lake	Icosah. + tail	520+150 nm	1.44 – 1.51 Mb, 28%	20 AaRS	Acant. & Verma.
	Platanovirus KSL-5	Icosahedral	290+140 nm	?	?	Saccamoeba
Mesomimivirinae					Algae-infecting	
	P. globosa virus (PgV)	Icosahedral	150 nm	460 kb, 32%		Phaeocystis
	H. ericina virus (CeV)	Icosahedral	160 nm	474 kb, 25%		Haptolina
	Aav	Icosahedral	140 nm	371 kb, 28.7%		Aureococcus
	TetV	Icosahedral	257 nm	668 kb, 41.2%, C DNA	Fermentation ?	Tetraselmis
Aquavirinae						
	CroV	Icosahedral	300 nm	693 kb, 23%	1 AaRS	Cafeteria
	BsV	Icosahedral	300 nm	1.386 Mb, 25%		Bodo saltans
	Klosneuvirus	No isolate	?	1.57 Mb, 28.6%	19 AaRS	unknown
	Catovirus	No isolate	?	1.53 Mb, 26.4%	15 AaRS	unknown
	Hokovirus	No isolate	?	1.33 Mb, 21.4%	13 AaRS	unknown
	Indivirus	No isolate	?	860 kb, 26.6%	3 AaRS	unknown

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Marseilleviridae		icosahedral			Acanthamoeba
Clade A	Marseillevirus (A)	icosahedral	200 nm	C DNA, 368 kb, 45%	Acanthamoeba
	Melbournevirus	icosahedral	200 nm	C DNA, 369, 44.7%	Acanthamoeba
	Cannes8 virus	icosahedral	200 nm	C DNA, 374 kb, 45%	Acanthamoeba
	Tokyovirus	icosahedral	200 nm	C DNA, 373 kb , 44.2%	Acanthamoeba
Clade B	Lausannevirus (B)	icosahedral	200 nm	C DNA, 346 kb, 43%	Acanthamoeba
	Port-Miou virus	icosahedral	200 nm	C DNA, 349 kb, 43%	Acanthamoeba
	Noumeavirus	icosahedral	200 nm	C DNA, 376 kb, 43%	Acanthamoeba
Clade C	Insectomime (C)	icosahedral	200 nm	C DNA, 386 kb, 43%	Acanthamoeba
	Tunisvirus	icosahedral	200 nm	C DNA, 382 kb, 43%	Acanthamoeba
Clade D	Brazilian virus (D)	icosahedral	200 nm	C DNA, 362 kb, 43.3%	Acanthamoeba
Clade E	Golden mussels (E)	icosahedral	200 nm	C DNA, 362 kb, 43.1%	Acanthamoeba

Family	Prototype	Virion type	Dimension	Genome, size, GC%	Specific features
Pandoraviridae		Amphora		L DNA, term. repeats	Ostiole, tegument
Clade A	P. salinus	Amphora	1000x500 nm	2.77 Mb, 61.7%	
	P. quercus	Amphora	1000x500 nm	2.07 Mb, 61%	
	P. inopinatum	Amphora	1000x500 nm	2.24 Mb, 60.6%	
	P. dulcis	Amphora	1000x500 nm	1.91 Mb, 63.7%	
Clade B	P. neocaledonia	Amphora	1000x500 nm	2 Mb, 61%	
	P. macleodensis	Amphora	1000x500 nm	1.84 Mb, 58%	

Family	Prototype	Virion type	Dimension	Genome, size, GC%	Specific feature	Host
Pithoviridae		Amphora		C-P DNA	Variable size, cork	Acanthamoeba
True Pandoravirus	P. sibericum	Amphora	1500x500 nm	610 kb, 35.8%	One cork	Acanthamoeba
	P. massiliensis	Amphora	1500x500 nm	683 kb, 35.4%	One cork	Acanthamoeba
Cedratvirus	Cedratvirus A11	Amphora	1000x500 nm	589 kb, 42.6%	Two corks	Acanthamoeba
	C. lausannensis	Amphora	1000x500 nm	575 kb, 42.8%	Two corks	Acanthamoeba
?	Orpheovirus LCC2	Amphora	1000x500 nm	1.47 Mb, 25%	Pandora-like cork	Vermamoeba

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Faustovirus		icosahedral			2xproteic capsids	
(asfarviridae ?)	Faustovirus E12	icosahedral	200 nm	C-P DNA, 466 kb, 36%		Vermamoeba
	Pacmanvirus	icosahedral	200 nm	L DNA, 395 kb, 33.6%		Acanthamoeba
	Kaumoebavirus	icosahedral	250 nm	C-P DNA, 351 kb, 43.7%		Vermamoeba

Family	Prototype	Virion type	Dimension	Genome, size, GC%	Specific feature	Host
Mollivirus		spherical			spherical	
	Mollivirus sibericum	spherical	600 nm	L DNA, 651 kb, 60%		Acanthamoeba

Family	Prototype	Virion type	Dimension	Genome, size, GC%	Specific feature	Host
Medusavirus		icosahedral			Numerous spikes, DNAPol delta Euk	
	Medusavirus Japan	icosahedral	200 nm	L DNA, 381 kb, 61.7%		Acanthamoeba

Legend: L DNA: linear chromosome, C DNA: circular chromosome, C-P DNA: circular or circularly permuted linear genome

Summary

Family	Virion type	Size (nm)	N isolates	Genome size	GC%	Life-style
Mimiviridae	icosahedral	755	>20	1.6Mb-370kb	25-41	Cytoplasmic
Marseilleviridae ¹	icosahedral	200	>20	390kb-360kb	43	Nucleo-cytoplasmic
Pandoraviridae	Amphora	1000x500	6	2.8Mb-1.85Mb	61	Nuclear
Pithoviridae	Amphora	(1000-2000)x500	5	685kb- 575kb	38	Cytoplasmic
Molliviridae	Spherical	600	1	650kb	60	Nuclear
Faustoviridae ¹	icosahedral	200-250	3	465kb-350kb	36	Nucleo-cytoplasmic
Medusaviridae ²	icosahedral	200	1	380kb	62	?

1: Boyer M, et al., Raoult D. (2009) Giant Marseillevirus highlights the role of amoebae as a melting pot in Emergence of chimeric microorganisms. PNAS USA. 106 :21848-53.

Reteno DG, et al., Raoult D, La Scola B. (2015) Faustovirus, an asfarvirus-related new lineage of giant viruses infecting amoebae. J Virol. 89:6585-94.

2: Takemura et al. (Ringberg symposium, Nov. 2017) (unpublished)