

# Reoviridae Cheat Sheet

by [deleted] via cheatography.com/140849/cs/30028/

#### **Basic Information**

▲ Linear double-stranded RNA genome and non-enveloped

#### **Sub-families**

sedoreovirinae

spinareovirinae

### size and genome

60 to 85 nm

dsRNA

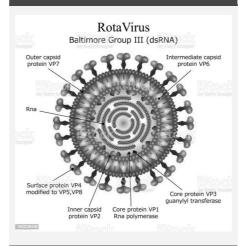
11 segments

size of genome - 10 - 27 kb

Protein		
6 structural proteins	VP1	RdRp
	VP2	Core protein
	VP3	Guanylyltran- sferase
	VP4	spike protein - cleaves VP5 and VP8
	VP6	Intermediate capsid
	VP7	neutralization of Ag
6 Non-struc- tural protein	NSP1	Interferon antagonist
	NSP2	NTPase - viroplasms with NSP5
	NSP3	Translation enhancer
	NSP4	Viroporins
	NSP5	Viroplasms with NSP2
	NSP6	Interacts with NSP5

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## Diagram



## Replication

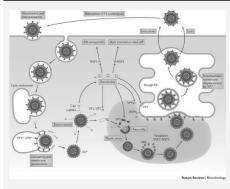
- ▲ Efficient replication requires cleavage of the outer capsid spike protein VP4, which allows the structurally flexible spike protein, VP4, to undergo conformational changes to interact with a series of cellular receptors.
- ▲ The virus is internalized by receptor-mediated endocytosis. The low calcium of the endosome releases outer capsid VP7 trimers, resulting in a conformational change in the VP4 spike protein that releases the transcriptionally active double-layered particles into the cytoplasm.
- ▲ Viral messenger RNAs (mRNAs) are used to translate proteins and as templates for RNA genome replication and packaging into newly made double-layered particles (DLPs) that occurs in specialized structures called viroplasms that co-localize and require components of lipid droplets for formation.
- ▲ Triple-layered particle (TLP) assembly is completed by a unique process involving binding of newly made DLPs to NSP4 that serves as an intracellular receptor, followed by particles budding into the endoplasmic reticulum

## Replication (cont)

During this process, transient enveloped particles are seen, the outer capsid proteins VP4 and VP7 are assembled, and the transient envelope is lost.

▲ The viral glycoproteins do not traffic to the Golgi. In polarized epithelial cells, particles are released both by viral lysis and by a nonclassical vesicular transport mechanism.

#### Replication Cycle



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