Paramyxovirus

Paramyxoviruses are negative-sense, single-stranded RNA viruses with a nonsegmented genome that is responsible for a number of human disease including measles and mumps. Parainfluenza virus and respiratory syncytial virus are also paramyxoviruses, which cause croup and bronchiolitis in infants, respectively. These virions are enveloped with a helical shape, and they contain fusion proteins and attachment proteins on the virion surface. The surface fusion proteins lead to fusion of cells causing multinucleated cells, which can be useful for diagnosis.



PLAY PICMONIC

Characteristics

Enveloped
Envelope
This virus contains a viral envelope that covers its protein capsids. Viral envelopes are often used to help viruses enter host cells.

RNA Virus
RNA-rhino
This is an RNA virus, meaning its genetic code consists of ribonucleic acid, as opposed to deoxyribonucleic acid.

Helical
Helical-shape
This virus has a helical shape as opposed to an icosahedral shape.

SS Negative Linear
SS Negative (-)
Negative-sense (3' to 5') viral RNA genome is complementary to viral mRNA. Therefore, the genome must be converted to positive-sense RNA by an RNA polymerase before translation can occur. Viruses with negative-sense genomes must carry an RNA polymerase inside the virion in order to replicate.

Nonsegmented
Nun on Segway
Paramyxoviruses contain a nonsegmented genome, in contrast to orthomyxoviruses, which have a genome that consists of eight segments.

Surface Fusion Protein Causes Multinucleated Cells
Surf-board Fuse with Multi-nuclear-shell
Paramyxoviruses contain fusion proteins that project from the surface of the envelope. This protein mediates cell entry by inducing fusion between the viral envelope and the cell membrane. Fusion of cells can lead to multinucleated cells that are characteristic of paramyxovirus infections.

Presentation

Measles
Mustache-weasel
Measles, or rubeola, is a syndrome caused by the measles virus, which is a member of the paramyxovirus family. Symptoms include fever, cough, coryza, conjunctivitis and a generalized rash.

Mumps
Mummy-humps
Mumps is caused by a paramyxovirus and typically causes painful swelling of the parotid glands. The virus can also cause painful testicular swelling and aseptic meningitis.

Sign up for FREE at picmonic.com

Bronchiolitis in Babies

Brachiosaurus and a Baby

Respiratory syncytial virus is in the paramyxovirus family and is the major cause of bronchiolitis in infants and children. Bronchiolitis is inflammation of the bronchioles that usually occurs in children less than two years old. Infants with bronchiolitis typically present with coughing, wheezing and shortness of breath.

Viruses

Parainfluenza

Parachute-flute

Parainfluenza viruses are in the paramyxovirus family. Parainfluenza viruses are a common cause of respiratory tract disease in children and infants and can cause pneumonia, bronchitis and croup in children.

Respiratory Syncytial Virus (RSV)

Super-RV

Respiratory syncytial virus is in the paramyxovirus family and is the major cause of bronchiolitis in infants and children. RSV can be treated with palivizumab, a monoclonal antibody which binds to virions and prevents their invasion of host cells.

Sign up for FREE at picmonic.com