

Pox Virus

Poxviruses are enveloped, double-stranded linear DNA viruses that are responsible for a number of diseases, including smallpox, cowpox and molluscum contagiosum. This virus has a unique structure that is exceptionally large and shaped like a brick. Smallpox was an infectious disease that localized in small blood vessels of the skin and mucosal surfaces, causing a characteristic maculopapular rash and fluid-filled blisters. The last naturally occurring case of this disease was in 1977 and has since been eradicated. Cowpox is also a skin disease that got its name from how the disease was transmitted to humans. Dairymaids contracted this disease when they touched the udders of infected cows, leading to red blisters that were similar to but much milder than smallpox. This family of poxviruses is also the cause of Molluscum contagiosum, which causes a characteristic flesh-colored umbilicated domed lesion on the skin. This viral disease has a higher incidence in children, sexually active adults and the immunocompromised, and is spread through skin-to-skin contact. These lesions are generally non-painful but can be pruritic or become irritated.



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Characteristics

Enveloped

Envelope

This virion contains an envelope that covers its protein capsids. Viral envelopes are often used to help viruses enter host cells.

Double-Stranded DNA

DNA Double-helix

This is a DNA virus, meaning its genetic code consists of deoxyribonucleic acid as opposed to ribonucleic acid. The genome is also double-stranded. All DNA viruses are double-stranded with the exception of parvovirus.

Linear

Line

This virus genome is double-stranded linear, as opposed to circular.

Non-Icosahedral

Nun Ice-cathedral

This virus has a unique non-icosahedral shape that is exceptionally large and shaped like a brick.

Signs and Symptoms

Smallpox

Small Fox

Smallpox was an infectious disease that localized in small blood vessels of the skin and mucosal surfaces, causing a characteristic maculopapular rash and fluid-filled blisters. The last naturally occurring case of this disease was in 1977 and has since been eradicated.

Cowpox

Cow-fox

Cowpox is a skin disease that got its name from how the disease was transmitted to humans. Dairymaids contracted disease when they touched the udders of infected cows, leading to red blisters that were similar to, but much milder than smallpox.

Molluscum Contagiosum

Mollusks with Contagious-green-fumes

Molluscum contagiosum causes a characteristic flesh-colored umbilicated domed lesion on the skin. This viral disease has higher incidence in children, sexually active adults and the immunocompromised, and is spread through skin-to-skin contact. These lesions are generally non-painful, but can be pruritic or become irritated.

Umbilicated Flesh-Colored Domed Lesions

Umbilicated dimple on mollusk

Molluscum contagiosum causes a characteristic flesh-colored umbilicated domed lesion on the skin.