

Simian Virus 5 (SV5, PI2, canine parainfluenza virus)

Classification

RNA virus, enveloped

Family

Paramyxoviridae

Affected species

Dogs, humans, and non human primates may be infected by one or more PI2 viruses. Although some rodents (guinea pigs and hamsters in particular) appear to seroconvert to SV5, this is probably a seroconversion to a human PI2 virus acquired from caretakers. The prototype virus from nonhuman primates, SV5, appears to have a limited host range based on the STAT2 gene differences between mice and humans. The virus has been reported in mouse, guinea pig, and hamster cell culture lines.

Frequency

Rare in laboratory colonies of guinea pigs and hamsters. Prevalence in wild and pet populations is unknown.

Transmission

Aerosol from caretakers (this is speculative) or through inoculation with contaminated cell culture.

Clinical Signs and Lesions

None in affected rodents.

Diagnosis

Diagnosis is typically made through serology (ELISA, IFA, HAI). Antibodies to the various parainfluenza groups may show cross-reactivity. The viruses may be distinguished by HAI, however.

Interference with Research

SV5/PI2 is sometimes used as a model for human paramyxovirus infections such as RSV or mumps. Animals with antibodies to SV5/PI2 may not be

suitable for use in these studies. Otherwise, no known contraindication for use of rodents with antibodies to SV5/PI2.

Prevention and Treatment

Humans commonly serve as a source of non-Sendai parainfluenzavirus infections in laboratory rodents (Sendai is a PI1 virus). To prevent transmission of SV5/PI2 to animals, the animals must be raised in strict bioexclusion housing, such as would be necessary for immunodeficient mice. As rodent SV5/PI2 probably originates from humans, animal care workers should use a HEPA-filtered respirator or N95 mask if this organism is of concern. SV5/PI2 may contaminate animal biological products, therefore cell lines, transplantable tumors and other biological products should be tested with PCR or by the HAP test (hamster antibody production) before being inoculated into animals. The handling of infected animals will depend on their value and the possibility of replacing them.

The virus is labile in the environment, and special measures are not required for disinfection. In general, as with most viral infections, total depopulation, thorough cleaning of all aspects of the animal room, and restocking are recommended, if this virus will interfere with research being conducted at a particular facility. Hysterectomy rederivation and embryo transfer have proven successful in the eradication of Sendai virus, another paramyxovirus closely related to SV5/PI2.

technical sheet

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