

Sendai virus

Prevalence

Historically significant but relatively rare in modern mouse and rat colonies. Positive serology reported in Guinea pigs but no reports of virus isolation. Hamsters are susceptible.

Diagnosis

ELISA, IFA, RT-PCR, isolation, lesions.

Screening

Quarterly or bi-annually

Disease

Clinical disease possible in all ages of mice. Marked variation in genetic susceptibility related to kinetics of immune response and mucociliary clearance. In epizootic infections (mice) signs may include chattering and mild respiratory distress, prolonged gestation in adults, neonate and suckling deaths, poor growth in weaners. Enzootic infections are subclinical and maintained by a constant supply of young susceptible animals. Subclinical or mild disease in rats, possible infant mortality. Chronic wasting disease/pneumonitis in immunodeficient strains

Note

Resistant strains of mice include SJL/J, RF/J, C57BL6/J. Most susceptible strains include 129/ReJ, 129/J, DBA/1J and DBA/2J.

Strains

Many laboratory strains, all of which are antigenically homologous.

Transmission

Respiratory, contact and airborne transmission. Replication of virus thought to be limited to the respiratory tract with virus shedding for 7 – 10 days in immunocompetent animals

Note

This virus is extremely contagious

Duration

Acute (2 – 3 weeks) – except in immunodeficient strains.

Durability

Inactivated by UV light, temperatures above 37°C and lipid solvents

Significance

High, with many reports of interference with research.

Control

Pathogen exclusion. Regular health monitoring of supplier sub-populations, transport in filter boxes, quarantine at receiving institution with serology testing 2 weeks post arrival. Maintenance under strict barrier protocol. Screening of transplantable tumours and other murine derived biological material prior to experimental use.

Post infection. Prompt culling of infected sub populations. Caesarean rederivation, embryo transfer or burn out selecting seronegative progeny as breeding stock post isolation (recommendations vary from 6 – 12 weeks) of individual breeding pairs in micro-isolators. Burn out is usually only successful if population is immunocompetent and may not be effective with transgenic or knockout lines where immune status has not been fully characterised. Strict husbandry protocols and efficient barrier conditions are essential for success.

Reading

"Infectious diseases of Mice and Rats" – National Academy Press: ISBN 0-309-03794-8.



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