charles river
accelerating drug development. exactly.

Reovirus
(REO-3)

Classification
RNA virus, nonenveloped

Family
Reoviridae

Affected species
Rats, mice, hamsters, guinea pigs

Frequency
Rare in laboratory colonies, common in wild mice and rats.

Transmission
Virus is shed in feces, and transmission is through fecal-oral route, direct contact, contact with fomites, human contact, and through airborne dusts. The virus is considered by many to be of low contagiousness. Reovirus has been shown to contaminate transplantable tumor stocks. Vertical transmission has not been reported.

Clinical Signs and Lesions
Many animals with natural infections with reovirus will not exhibit clinical signs. Clinical signs in young mice may include stunting, diarrhea, oily coats, and jaundice. Histopathologic lesions that may be seen in natural infections of mice are an acute, diffuse encephalitis.

Diagnosis
Diagnosis is commonly accomplished via serology (ELISA, MFIA™, IFA), but may also be performed via PCR.

Interference with Research
Natural infection with reovirus is not proven to be specifically linked to interference with research. Experimental infections with reovirus, however, are reported to have effects on the cytokine levels, the clearance of some bacteria from the lung, tumor take, and liver function.

Prevention and Treatment
Wild mice should be excluded from the animal house. Wild-caught mouse colonies should be isolated from laboratory mice and rederived as soon as possible. All murine-derived biological products such as tumors, serum, or cell lines should be tested for the presence of viral contaminants before being used in mouse facilities or the laboratory. Experimental animals containing tumor transplants, cell line injections, or murine-derived product injections should be housed away from breeding animals. Regular testing of colonies for antibodies to reovirus should be part of routine health monitoring.

Rederivation through hysterectomy or embryo transfer is the gold standard of disease eradication and should be successful in cases of reovirus infection. The persistence and stability of reoviruses in the environment should be a primary consideration. Aggressive chemical decontamination with the help of detergents and anti-viral agents is advised, as well as autoclaving or cold sterilization of materials in direct contact with animals.

References
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