Mouse Rotavirus  
(Epizootic Diarrhea of Infant Mice; EDIM)

Classification
RNA virus, nonenveloped

Family
Reoviridae, Group A rotaviruses

Affected species
Laboratory and wild mice

Frequency
Common among both laboratory and wild mice.

Transmission
Rotavirus is shed in large amounts in feces, and fecal oral transmission is the normal route of transmission. Spread throughout an animal room is through fecally-contaminated bedding, dust, or other materials. Vertical transmission has not been noted.

Clinical Signs and Lesions
Although all ages of mice are susceptible to infection, only mice younger than 14 days show clinical signs. However, in an enzootically infected colony, maternal antibody provides protection from disease. Animals infected with EDIM often present with a oily, yellow diarrhea and distended abdomen. There is little mortality. Histopathologically, vacuolation of enterocytes and blunting of villi may be seen in animals less than 14 days of age, although the diagnostic specificity of these changes is moot.

Diagnosis
Diagnosis is usually accomplished through serologic examination. MFIA™/ELISA or IFA work well. In actively infected animals, rotavirus antigen can be detected in feces.

Interference with Research
EDIM infection can interfere with experiments that use young mice. Infected B cell deficient mice can persistently shed EDIM. Infection modifies intestinal absorption and concentrations of the intestinal enzymes.

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. Regular testing of colonies for antibodies to EDIM should be part of routine health monitoring. Rederivation through hysterectomy or embryo transfer is the gold standard of disease eradication. The persistence and stability of rotaviruses in the environment should be a primary consideration. Aggressive chemical decontamination with the help of detergents and oxidizing agents is advised, as well as autoclaving or cold sterilization of materials in direct contact with animals.

References
