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accelerating drug development. exactly.

Rat Rotavirus

(Infectious Diarrhea Of Infant Rats; IDIR)

Classification

RNA virus, nonenveloped

Family

Reoviridae

Affected species

Rats, humans, and swine are probably infected by distinct rotaviruses.

Frequency

Unknown, but apparently very rare in laboratory or wild rats.

Transmission

Transmission is via the fecal-oral route. Virus may be transmitted on fomites, via dusts in the environment, and possibly through human contact. IDIR is a rotavirus type B, which is an uncommon human infection, although it has caused several large outbreaks in China.

Clinical Signs and Lesions

Natural infections in suckling rats may result in poor growth, diarrhea, and perianal dermatitis. 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 questionable.

Diagnosis

Diagnosis is problematic. Antibodies to Group B rotavirus do not cross react with antigen from Group A rotaviruses, so mouse rotavirus (EDIM) assays are of no use. Most commercial laboratories do not test for Group B rotaviruses and the necessary reagents are not commercially available, although PCR can be used on feces to investigate suspected outbreaks.

Interference with Research

IDIR infection can interfere with experiments that use young rats. Infection modifies intestinal absorption and concentrations of the intestinal enzymes.

Prevention and Treatment

Wild rats should be excluded from the animal house. 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

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