



INFORMATION SHEET

REOVIRUS SEROTYPE 3 (REO)

CLASSIFICATION

Family: Reoviridae
Genus: Orthoreovirus

- Non-enveloped, icosahedral shaped capsid
- Linear, double-stranded RNA virus
- 16-27 kbp genome
- 60-85 nm in diameter

PREVALENCE

Relatively rare worldwide in contemporary animal facilities. Can be found in mice, rats, guinea pigs and hamsters due to the wide host range of mammalian reoviruses in general.

DIAGNOSIS

ELISA, IFA, RT-PCR

DISEASE/CLINICAL SIGNS

Reovirus type 3 is an acute disease and affects mainly neonatal and weanling mice. Natural infection is generally sub-clinical, but the following signs may be observed:

- Stunting
- Hepatobiliary jaundice
- Diarrhoea
- Oily coats
- Acute pancreatitis
- Myocarditis
- Enlarged black gallbladders
- Hepatic necrosis
- Yellow kidneys

STRAINS

Three serotypes of Reovirus exist - serotypes 1, 2 and 3 – based on neutralisation and haemagglutination inhibition tests. Type 3 is the most pathogenic serotype of laboratory rodents. It is not known how many strains of Reovirus Type 3 exist.

TRANSMISSION

The main route of transmission is thought to be via:

- Oral-faecal
- Direct contact



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Uniform transmission between cage mates or mothers to infants does not occur – this indicates a low transmission rate via the oronasal route.

INTERFERENCE WITH RESEARCH

Experimental infections include the following effects:

- Reduction in pulmonary clearance of *Staphylococcus aureus*
- Suppression of pulmonary carcinogenesis
- Inhibition of cellular DNA synthesis
- Induction of apoptosis
- Increase levels of chemokine mRNA expression
- Rejection of various murine tumours
- Induction of murine NK cell cytotoxicity

DURABILITY

Resistant to:

- Temperatures of 4°C to room temperature
- Lipid solvents e.g. ether
- 1% hydrogen peroxide (bleach), 1% phenol
- 3% formaldehyde
- pH range from 2.2 to 7.5
- Antibiotics such as aminoglycosides and penicillin

Susceptible to:

- Sequential application of 95% ethanol
- Sequential application of Sodium hypochlorite (800ppm chlorine)
- Extreme alkaline conditions (pH 11)
- Neutral Red dye
- UV light
- 3% formalin at 56°C

CONTROL

Maintain regular health monitoring of supplier sub-populations and strict protocols for barrier colonies. Exclude wild animals from facility (due to wide host range of mammalian reoviruses). Care to be taken by testing transplantable tumour and cell lines before use. It is possible that humans are a source of contamination but this has not been proven.

POST INFECTION

Caesarean rederivation or embryo transfer can be used to control spread of the virus.

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