



INFORMATION SHEET

MOUSE ADENOVIRUS

CLASSIFICATION

Family: Adenoviridae
Genus: Mastadenovirus

- Non-enveloped, DNA Virus
- Linear, double-stranded
- 30-31 kbp genome
- Regular, icosahedral shaped, 80-90 nm in diameter

PREVALENCE

Relatively rare. The mouse is the principal host, although there have been reported instances of positive serological results in rats. In a serological survey of mice in south-eastern Australia, approximately 30-40% were found to have MAV-2, and none had MAV-1.

DIAGNOSIS

ELISA, IFA

DISEASE/CLINICAL SIGNS

Naturally occurring disease is asymptomatic. Experimental infection has produced results that depend on virus dose, mouse strain and age, inoculation route and strain of the virus. MAV-1 (or MAD-1) has been more extensively studied and reported effects include:

- Ruffled fur
- Conjunctivitis
- Intranuclear inclusions in endothelial cells of brains
- Disseminated disease in suckling mice
- Haemorrhagic encephalitis
- Tremors
- Paralysis
- Wasting (athymic mice)

C57BL/6 mice appear to be more susceptible than BALB/c mice when experimentally infected with MAV-1. SJL/J mice appear to be most susceptible. Susceptible mice have higher virus loads in brain and spleen than resistant mice, but only modest differences in histopathology.

STRAINS

There are currently two strains of Mouse Adenovirus tested for: MAV-1 (FL-1 strain), and MAV-2 (K87 strain). MAV-2 infections appear to be localised in the intestine, whereas MAV-1 has a systemic distribution pattern.



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TRANSMISSION

Close contact is required for transmission of MAV.

Although MAV is shed in urine and faeces, aerosols have not been reported as a cause of transmission, and neither has dirty bedding reported to be a cause of infection.

INTERFERENCE WITH RESEARCH

Effects include but are not limited to:

- Transiently increased expression of IL-12 by macrophages
- Increased levels of chemokines
- Blood-brain barrier dysfunction
- Interference with CNS, renal, and gastrointestinal studies

DURABILITY

Resistant to:

- Ethers
- Thermal inactivation (56°C)
- Acid pH
- 4°C (2 months)
- Room temperature (2 weeks)

Susceptible to:

- 50% ethanol

CONTROL

Most commercial colonies are free of mouse adenoviruses; due to the close contact required for transmission of MAV, standard microisolator techniques should be sufficient in maintaining disease control. MAV-1 has been reported to infect mice for up to 2 years, whereas MAV-2 may be shed in the faeces for 3 weeks in immunocompetent mice, and up to 6 months in athymic mice.

POST INFECTION

If required, embryo rederivation techniques can be employed to control infected colonies.

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