



ENCEPHALITOOZON CUNICULI

CLASSIFICATION

Phylum: Microspora

Class: *Microsporidia*

Family: *Encephalitozoonidae*

- Gram positive fungus
- Obligate protozoan intracellular parasite
- Direct life cycle
- Exists outside of host as an environmentally-resistant spore
- Deposits infective sporoplasm in host cell's cytoplasm

PREVALENCE

High in rabbits (accepted as the principal host). Can infect mice, rats, guinea pigs and hamsters; also found in dogs, goats, sheep, pigs, horses, foxes, cotton-top tamarins to name a few. Usually infected animals are also affected with other parasitic infections.

DIAGNOSIS

ELISA, IFA and/or histological examination of affected organs (kidneys, brain, liver, lungs).

DISEASE/CLINICAL SIGNS

Infection in immunocompetent mice is usually subclinical. Natural infections in immunocompetent mice have been shown to manifest as inflammation in CNS and kidneys, and parasites can be observed in affected areas (can be difficult to identify in some cases). C57BL/6, DBA and 129/J mice appear to have a higher parasite burden and depressed antibody responses to intraperitoneal inoculation than BALB/c mice

BALB/c, A/J and SJL mice are relatively resistant

In immunosuppressed or immunocompromised mice overt disease may be seen, such as wasting, lethargy and even death. Experimentally infected mice may develop ascites or chronic wasting syndromes characterised by lethargy, dehydration and death within 2 to 4 weeks of inoculation. Rats and rabbits exhibit meningoencephalitis with a multifocal granulomatous inflammation.

STRAINS

At least three strains have been identified based on host specificity and other differentiating criteria.



INFORMATION SHEET

TRANSMISSION

Primarily spread via secretion and ingestion of infective spores in urine. In rabbits, transmission is both vertical (transplacental) and horizontal (inhalation).

INTERFERENCE WITH RESEARCH

Effects include but are not limited to:

- Hepatosplenomegaly with ascites
- Alteration of host responses to transplanted tumours
- Reduction of humoral and cellular responses to a variety of immunogens
- Transiently increasing NK cell activity

DURABILITY

Resistant to:

- Drying (up to 4 weeks)

Susceptible to:

- 10% formalin
- 70% ethanol
- Steam sterilization
- Oxidising disinfectants

CONTROL

Steam sterilization of equipment and contaminated animal bedding, and routine disinfection of surfaces, should prevent environmental build-up of spores. There are no known effective chemotherapeutic agents. Care to be taken by testing transplantable tumour and cell lines before use. Mice and rats should not be housed near known infected rabbit colonies.

POST INFECTION

Colonies should be depopulated and replaced with clean stock. Rederivation can be performed.

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