SPIRONUCLEUS MURIS

CLASSIFICATION

Order: Diplomonadida
Family: Hexamitidae
Genus: Spironucleus

- Intestinal, flagellated protozoa
- Anaerobic
- Direct life cycle
- Cyst form (7-4 µm) - infective stage
- Motile trophozoite form (10-15 x 3-4 µm) – slender tapered body with 4 flagella pairs
- Trophozoites- found in small intestine, cysts found mainly in caecum, colon and faeces

PREVALENCE

The suggested prevalence of *Spironucleus muris* in laboratory and wild mouse populations ranges from 4 to 39%.

DIAGNOSIS

Direct microscopy, faecal float

DISEASE/CLINICAL SIGNS

*S. muris* infections generally do not cause clinical symptoms in immunocompetent mice. However, weanling and immunodeficient mice may present with clinical symptoms and large numbers of *S. muris* are often an indicator to an underlying disease or infection such as an MHV infection.

Clinical symptoms:
- diarrhoea
- dehydration
- weight loss
- rough coat
- lethargy
- abdominal distension
- hunched posture
- can result in death
STRAINS

There are 12 strains of *Spironucleus species* infecting a variety of fish, amphibians and birds, but *S. muris* only infects rodents.

TRANSMISSION

*S. muris* is transmitted between mice and other rodents through the faecal-oral route. The minimum infectious dose for a mouse is 1 cyst.

INTERFERENCE WITH RESEARCH

Effects include but are not limited to:

- increasing the severity of copathogen infection
- increasing mortality with cadmium treatment
- altering macrophage function

DURABILITY

Chemotherapeutic elimination of trophozoites and cysts in animals has not been successful.

Cysts shed in the environment are susceptible to common disinfectants, 70% ethanol, bleach, temperatures above 45°C.

CONTROL

Maintain regular health monitoring of supplier sub-populations and strict protocols for barrier colonies. Exclude wild mice from facility.

POST INFECTION

Rederivation can be used to repopulate rodent colonies.

BIBLIOGRAPHY


Barthold S.W., 1997, Monographs on Pathology of Laboratory Animals, *Spironucleus muris* Infection, Intestine, Mouse, Rat and Hamster, Volume 3, pp 419-422