



INFORMATION SHEET

GIARDIA MURIS

CLASSIFICATION

Order: Diplomonadida

Family: *Hexamitidae*

Genus: *Giardia*

- Flagellated protozoa
- Anaerobic
- Cyst form (15-17 μm) - infective stage
- Motile trophozoite form (7-13 x 5-10 μm) – pear shaped with 4 flagella pairs

PREVALENCE

Giardia muris is considered a primary pathogen of mice and is common in wild rodent populations. There are many other *Giardia* species that infect amphibians, birds, mammals and humans.

DIAGNOSIS

Direct microscopy, faecal float.

Cysts are excreted intermittently, hence several samples (e.g. approximately 3 faecal samples over 3-5 days) should ideally be examined.

DISEASE/CLINICAL SIGNS

G. muris infections generally do not cause clinical symptoms in immunocompetent mice. However animals that are immunocompromised may present with more severe symptoms.

Clinical symptoms:

- weight loss
- stunted growth
- rough coat
- an enlarged abdomen
- diarrhoea
- can result in death in severe cases

STRAINS

There are currently six distinct *Giardia* species recognised, with the virulence and zoonotic potential between species and genotypes varying. *G. muris* is the only species known to infect rodents and does not infect humans.

Resistant mouse strains to *G. muris* include DBA/2, B10.A, C57BL/6 and SJL/2. More susceptible mouse strains to *G. muris* include BALB/c, C3H/He, A/J and CrI:ICR. Male mice appear to shed cysts for longer in their faeces, and trophozoites are present for longer in their intestines than females.



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TRANSMISSION

G. muris is transmitted between mice and other rodents through the faecal-oral route. The minimum infectious dose for a mouse is approximately 10 cysts.

INTERFERENCE WITH RESEARCH

Effects include but are not limited to:

- intestinal epithelial cell alterations
- decreased brush border enzymes required for food breakdown
- increased lymphocyte infiltration into small intestine
- decreased T-cell response

DURABILITY

Resistant to:

- cysts shed into the environment are resistant to chlorine and ozone exposure

Susceptible to:

- cysts can be inactivated by autoclaving bedding and caging material
- most quaternary compounds

CONTROL

Maintain regular health monitoring of supplier sub-populations and strict protocols for barrier colonies. Exclude wild mice from facility. Maintain high level of asepsis and disinfection/cleanliness of facility.

POST INFECTION

Rederivation can be used to repopulate rodent colonies. Treatment with oral metronidazole is not very successful.

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