

Background:

Mice can be infested with several types of fur mites including *Myobia musculi*, *Myocoptes musculinus*, and *Radfordia affinis* and it may reach a prevalence of 40% in mouse colonies. Although *Myocoptes* is the most commonly diagnosed fur mite, *Myobia* appears to be the most clinically relevant because it is more likely to induce a hypersensitivity reaction in the mouse leading to more severe irritation and skin disease.

The mites seem to prefer the fur on the head, neck and shoulder regions, although in heavy infestations they can be found throughout the body and if mixed *Myobia* and *Myocoptes*, then *Myocoptes* tends to be found on the ventrum dorsally near the tail. Signs that may be seen in the mouse can range from no signs, to mild signs such as ruffled fur, patchy hair loss, and pruritus, to severe cases with generalized alopecia, ulcerations and self-mutilation behaviors. Mites are passed by direct contact and will infect neonates as soon as the pelage starts to grow at about 1 week of age.

Diagnosis is usually achieved by examination of animals' fur or by PCR testing of fur samples.

Research Effects:

Mite infestations can cause general malaise condition such as weight loss, decreased fertility, and shortened lifespan. It can also lead to secondary bacterial infections and affect the immune system by causing elevated levels of IgE, IgG, IgA, inflammatory cytokines, and degranulation of mast cells, as well as lymphocytopenia. These effects may persist even after mite eradication. Additionally, infestations can compromise collaborations between facilities if one facility excludes these parasites from their colony.

Prevention/Control:

Every attempt is made to only acquire animals from approved vendors with documented histories of fur mite-free mice. Mice coming in from other institutions or non-approved vendors may undergo an extended quarantine and test period. Mice being taken out of the LAR animal spaces to an investigator laboratory for treatments/procedures are kept in a separate holding area and are not returned to the general colony areas.

When fur-mites are detected in our colony, investigators are contacted to develop an eradication plan. In most cases, the affected animals will have a parasiticide medication-Moxidectin-administered topically and be placed in clean cages. Increased containment such as increased PPE and entering affected rooms last will be put in place until PCR samples are negative for mites.

References:

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Percy DH, Barthold SW. *Pathology of Laboratory Rodents and Rabbits*. Ames: Iowa State University Press; 2007.

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