

Inflammatory Bowel Disease Animal Model Guidelines

The murine model of inflammatory bowel disease (IBD) is induced by various modalities. The general clinical manifestations of the several modalities are similar but can vary widely in severity depending on multiple factors. The NCI at Frederick Animal Care and Use Committee [ACUC] expects PIs using these models to be mindful of the potential clinical signs and incorporate appropriate monitoring, endpoint delineation, record keeping and measures to minimize pain and distress into their animal study proposals.

General approach to meeting the ACUC's expectations is as follows:

Specific details of induction modalities should be described.

The health of animals on study should be monitored daily by animal care staff and reviewed at least weekly by PI (or designated staff member) or technical staff. Possible clinical signs associated the induction of IBD include: weight loss, dehydration, anemia (pale ears/feet), diarrhea, lack of stool, rectal bleeding, melena (blood in feces), rough hair coat, hunched appearance, and decrease in food and water consumption. Once initial clinical signs are noted PI or technician review should be increased as appropriate to the specific induction modality. The specifics of this increased monitoring should be described in the ASP. If weight loss is to be used as endpoint criteria, details of weighing frequency and % body weight loss used as a humane endpoint should be provided. Additionally, animal weights and a description of other clinical signs should be provided in such a way that animal care and veterinary staff can review, for example, on the cage card or in an easily accessible logbook. If anemia from chronic rectal bleeding is to be monitored, the animal's appearance can be checked for signs of anemia, such as pale extremities, lethargy, rapid breathing, etc.

Rough hair coat, less than 20% weight loss, mild rectal bleeding (non-active bleeding), diarrhea, decreased stool production, moderate decrease of food and water intake or mild to moderate rectal prolapse (<3mm, non-ulcerative or necrotic) are generally considered less severe symptoms and the animals can be permitted to remain on study with increased monitoring and supportive care, as long as these guidelines are outlined in detail in an approved ACUC ASP. Mice with mild clinical signs must be given wet feed, water bottle, and/or heating pad to help minimize the adverse clinical symptoms unless scientifically justified.

Mice with more severe clinical signs Including: hunched posture, lack of movement, , cool to touch, greater than 20% weight loss, severe rectal prolapse (>3mm, actively bleeding or necrotic) or that are found moribund should be euthanized.

If it is necessary to go beyond these guidelines specific justification must be provided.

General NCI at Frederick ACUC guidance pain and pain and distress and establishing is provided in the following 2 links:

NCI at Frederick ACUC guideline: Pain and Distress in Rodents: Responsibilities, Recognition, and

Alleviation

<http://ncifrederick.cancer.gov/Lasp/Acuc/Frederick/Media/Documents/ACUC7.pdf>.

NCI at Frederick ACUC guideline: Guidelines for Pain Category Classification:

<https://ncifrederick.cancer.gov/Lasp/Acuc/Frederick/Media/Documents/ACUC8.pdf>

NCI at Frederick ACUC guideline: Endpoints in research animals

<http://ncifrederick.cancer.gov/Lasp/Acuc/Frederick/Media/Documents/ACUC10.pdf>