

**Monitoring New or
Uncharacterized Phenotypes
In Genetically Modified Mice
IACUC Standard Procedure
Effective Date: January 2023**

Description of Procedure:

When animals are genetically modified in a targeted or random fashion the phenotype is often unpredictable and may produce pain, distress or affect ability to grow and thrive. Therefore, when new genotypes are created, with the possibility of anatomical, behavioral or physiological defects, animals must be monitored closely. The parameters observed should include morbidity, mortality, development, anatomic/histologic abnormalities, teratogenicity, and lifespan in addition to those listed in the chart below. Additional analysis may be necessary to define the phenotype and determine if proactive measures can alleviate the impact of the genetic modification on the animal's well-being and to establish humane endpoints. The following parameters are guidelines to consider when monitoring animals with unknown phenotypes, and should be modified according to the specific body systems affected.

Age of animals	Parameters to be monitored
0-21 days	Pup survival (litter size), activity, Body Condition Score (BCS), growth, general appearance, skin/grooming, ability to nurse
21 days +	Activity, BCS, locomotion/activity, general appearance, skin/grooming, behavior

If an animal is experiencing an unexpected phenotype, it should be reported to LARC Veterinary Staff and added to the IACUC protocol. Criteria for euthanasia should be specified in the protocol, and may include body condition score of 2 or less or decreased ability to move, feed or access water.

Resource:

Guide for the Care and Use of Laboratory Animals: 8th edition. 2011. National Research Council. Washington: National Academies Press.