Institutional Animal Care & Use Program - UTEP	
Title: IACUC Guidelines on Genetically Modified Animals and Genotyping	
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In Effect ☒ **Rescinded** ☐	**Date Rescinded**:

A. RESPONSIBILITIES

It is the responsibility of all personnel using animals at The University of Texas at El Paso (UTEP) to abide by this policy. It is the responsibility of the Institutional Animal Care and Use Committee (IACUC) to review for approval, properly justified requests for an exception to this policy.

1) Generation or use of genetically modified animals (e.g. transgenic) may require review and approval by the Institutional Biosafety Committee.
2) Researchers should use the least invasive method of genotyping that is practical for their research and should collect the smallest sample necessary for reliable results (Refer to IACUC Policy 002).
3) The PI must ensure sufficient training for individuals performing these technical procedures.
4) The PI is responsible for describing tissue collection procedures in the approved animal use protocol.
5) The PI is responsible for reporting new phenotypes that negatively affect animal health and well-being to the IACUC.

B. POLICY

This policy applies to all faculty animal users engaged in research and teaching at UTEP.

C. BACKGROUND

Genetically-modified animals (GMA) have induced mutations that are human-made alterations in their genetic code. This includes both transgenic and targeted mutations that are created to study the expression, overexpression, or under expression of a specific gene. The Guide for the Care and Use of Laboratory Animals (the Guide, NRC 2011) states: "With their inherent potential for unanticipated phenotypes, GMAs

are an example of models for which increased monitoring for unexpected outcomes could be implemented."

D. PROCEDURE

Genetically modified animals (GMA) represent an increasingly large proportion of animals used in research. Protocols that utilize GMA should address several items:

1) The effect that genetic modification will have on the health of the animal must be described in detail. If this is a new modification and the health effects are unknown, describe the likely health outcomes of genetic change according to current understanding of the gene in question and the disease state under study.
2) Endpoints to address adverse health effects.
    a. Newly developed GMA that have not previously been characterized must be closely scrutinized for general health and behavioral abnormalities that may impact the animal's well-being.
    b. The PI must provide general humane endpoints in case a severe debilitating phenotype develops and should provide the IACUC with this information in writing when the new mutant has been developed or at the next annual review of the animal-use protocol.
    c. Endpoints are relevant both in the context of experimental procedures and with regard to the potential pain or distress that is caused by the genetic modification itself.
    d. The protocol should include endpoints for the initial phase of the study when the phenotype of a new genetic modification is being characterized, as well as for later phases of the study for both experimental and non-experimental (i.e. breeding) animals.
3) Animal number estimates, which should include all animals generated to produce mice of desired genotype (including culled mice of incorrect genotype and new/additional breeders to maintain colony).
4) Please contact the IBC regarding research that includes:
    a. Use of, purchase of, or breeding of transgenic animals other than rodents

b. Breeding of two different lines of transgenic rodents that is not exempt from the NIH Guidelines
    i. This exemption covers the breeding of two different lines of transgenic rodents, or the breeding of a transgenic rodent and non-transgenic rodent, with the intent of creating a new line of transgenic rodent that can be housed at BSL-1 if:
        1. Both parental rodents can be housed under BSL1 containment; and
        2. Neither parental transgenic rodent contains the following genetic modifications: incorporation of more than one-half of the genome of an exogenous eukaryotic virus from a single family of viruses; or incorporation of a transgene that is under the control of a gammaretroviral long terminal repeat (LTR); and the transgenic rodent that results from this breeding is not expected to contain more than one-half of an exogenous viral genome from a single family of viruses

Review History	
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