

IACUC Standards for Environmental Chamber Housing

Effective Date: September 1, 2022

Purpose

This document outlines standards to ensure the highest level of animal welfare and compliance for research animals in various environmental and research chambers. Chambers used to house animals require IACUC approval in the protocol. The environmental limits provided below are to avoid significant physiologic changes and health and welfare impacts.

Regulatory Authority

Guide for the Care and Use of Laboratory Animals, Eighth Edition, November, 2013, p. 42 – Environment, Housing, and Management.

Scope

This applies to rodents and birds housed within chambers both in and outside of centralized vivaria. For example, this may include warm, cold, circadian rhythm, metabolic, and behavioral chambers. Animals may be in the chamber in their home cage, or placed directly in the chamber.

Policy

Investigators should consult Animal Care Services (ACS) and IACUC prior to placing orders for chambers or beginning construction of lab-made chambers. Placing animals in chambers requires IACUC approval, with a complete description of the chamber, Standard Operating Procedures for cleaning and maintenance, and a clear consideration of possible adverse events that may occur in the chamber.

General Standards

All new chambers must be evaluated by the PI and a subcommittee of the IACUC before use. Chamber operators must demonstrate that any system failure will not result in harm to the animal and that alarm(s) function properly. Operators should verify the time between a system failure, development of dangerous conditions, and effective operator response. Emergency procedures must be in place to preserve animal health and welfare if a chamber fails (power supply, etc.).

Alarm system

A 24hr remote alarm system should be implemented for conditions that would be lethal to the animals (e.g., air supply in hermetically sealed chambers, etc.). This alarm system should have the capacity to notify emergency contacts immediately should the system fail.

Maintenance

Manufacturer maintenance and calibration recommendations must be followed. This includes maintenance, calibration, and cleaning instructions for chamber enclosures and all accompanying equipment (including controllers/ sensors/ alarms). Laboratory designed/constructed equipment must have equivalent instructions. Contact materials/surfaces must be sanitizable or disposable.

Record keeping

Chambers must be monitored a minimum of once daily by research personnel and confirmed by ACS. Chamber logs are posted on each chamber and must be completed accurately and continuously indicating the census even if that is zero.