Florida Atlantic University

Institutional Animal Care and Use Committee

SOP

Sanitization of Caging and Equipment used with Research Animals and Methods to Measure Sanitization Efficacy

Performance Standard:
To ensure that equipment and caging used in animal activity areas by researchers and their staff are clean/disinfected and/or sanitized prior to and between uses. The purposes of this Policy are to minimize the risks of cross-contamination or exposure to microbial contamination, excrement, biological fluids and pheromones from one research subject to another, and to decrease allergen exposure to personnel.

Background/Purposes:
Florida Atlantic University (FAU) is committed to the improvement of human and animal health through research and the advancement of science. It is FAU policy to meet or exceed all laws and regulations governing animal care and use in research, teaching and testing. This SOP in conjunction with FAU Policy 10.4.7 is intended to outline the requirements for ensuring equipment and cages maintained by research staff is cleaned/disinfected and/or sanitized. Secondarily, this SOP is to address the necessity to ensure and document the effectiveness of the cleaning and sanitization procedures used on a semiannual basis (minimally).

Scope:
This SOP applies to all faculty, their staff and students who work with equipment and caging used with research animals. This includes, but is not limited to: Researcher maintained animal housing satellite facilities including aquatic housing facilities, specialized housing equipment used and maintained by the researcher (metabolic housing, exercise equipment), experimental equipment (e.g. imaging, testing equipment, anesthesia and euthanasia equipment, and neurobehavioral testing equipment), restraint and capture devices

Responsibilities:

1. Researcher/Investigator:
    a. Ensure compliance with IACUC Policy, SOP, IACUC Satellite Program Description (as applicable), the Guide for the Care and Use of Laboratory Animals, PHS Policy, and the Animal Welfare Act/Regulations (as applicable).

b. Ensure proper cleaning/disinfection and/or sanitization of all equipment and primary housing.
c. Document sanitization of all equipment
d. Perform and document semi-annual (minimally) evaluation of sanitization efficacy using methods outlined in this SOP.

2. IACUC:
    a. Review and approve Policies, SOPs and Investigator Managed Satellite Program Descriptions
    b. Assure adequate training of personnel.
    c. Inspect animal facilities/laboratories at least semiannually to ensure records are maintained and approved procedures are followed.
    d. Review/ report animal welfare concerns.

3. Research Integrity:
    a. Serve as liaison between the IACUC and PIs to ensure procedures are consistent with the regulatory requirements.

4. Comparative Medicine:
    a. Provide guidance/oversight on appropriate methods of cleaning/disinfection/ and sanitization of primary housing and equipment to researchers and their staff.
    b. Provide consultation services to investigators on the appropriate choice of cleaning agents, disinfectants and sanitizers in consultation with Environmental Health and Safety as needed.
    c. Assist research staff with training personnel as needed.
    d. Provide support regarding proper maintenance of equipment.

SOP Outline:

A. APPROVED METHODS OF SANITIZATION

1. **Approved Cage Washer –** All equipment and primary housing that can sustain cleaning/disinfection and sanitization through an approved cage wash should be processed in this manner. Equipment and caging processed by Comparative Medicine in one of their industry cage washers will fall under sanitization/temperature monitoring requirements and monitoring is described in CM SOP(s). No additional monitoring of effectiveness will be required.
2. **Dishwasher –** Achieves cleaning and disinfection with chemicals, hot water or a combination of both.

3. **Hand washing of equipment/caging –** Used for equipment/caging that is not conducive to mechanical cage washing, or residues associated with the use of mechanical cage washers.
4. **Hand sanitization –** Used for fixed surfaces, stationary equipment, delicate equipment, and heat or moisture sensitive apparati

B. General Guidelines for Cleaning/Disinfecting and Sanitizing of Caging/Equipment

a. Clean all equipment/caging to remove excessive amounts of dirt, debris and excrement
b. Use of sponge, scrub brush, bottle brush is recommended to removed adhered materials. These utensils should be sanitized regularly and replaced as needed.
c. Use a cleaning agent (when appropriate for the equipment) along with scrubbing or gentle agitation to aide in removing additional soiled material from the equipment/cage
d. Use an approved chemical disinfectant, hot water or combination of both.
e. Care should be used with the use of chemicals for equipment and primary enclosures for aquatic species as many chemicals and their residues can be toxic. Alternate methods of cleaning, disinfection and sanitization may be necessary for some species.

C. General Guidelines for Cleaning/Disinfecting and Sanitizing of Surfaces and sensitive equipment/apparati

a. Clean all sensitive equipment or surfaces by removing dirt, debris and excrement
b. Use an approved disinfectant spray to spray on the area, or spray onto a cloth and then wipe down the instrument/apparatus/surface
c. Clean all surfaces where animals/animal caging are to be placed prior to and after each use by first removing dirt, debris and excrement followed by spraying with an approved disinfectant, allowing appropriate contact time, followed by wiping down the surface.
d. Allow appropriate contact time for all disinfectants or sanitizing agents used.
e. Always use products and associated PPE as per manufacturer's recommendations and guidelines.

D. Agents used to clean/disinfect and sanitize caging/equipment/apparati

a. Quaternary Ammonium Compounds (e.g. Quatricide, Cavicide)
b. Peroxygen Compounds (e.g. Virkon, Rescue)
c. Chlorine Compounds (e.g. Bleach, MB-10, Clidox)
d. Alcohols are acceptable for some applications (Isopropyl alcohol)
    i. Not effective against non-enveloped viruses or bacterial spores
    ii. Surfaces must be saturated and allowed to air dry

e. Hot water alone may be adequate for some tanks/equipment (aquatics/avian)— Effective sanitization can be achieved with wash and rinse water reaching temperatures of 180 °F.

E. Monitoring the Effectiveness of Sanitization of caging and equipment.

a. If sanitization is performed by Comparative Medicine using the mechanical cagewasher, no additional monitoring/recordkeeping is required beyond that which is performed routinely by CM.
b. Monitoring ATP after removing debris but before sanitization and again after sanitization to determine effectivity of procedure.
c. Aquatic systems may benefit from microbiologic monitoring (culture of tanks following cleaning/disinfection). RODAC (Replicate Organism Detection and Counting) plating and testing is acceptable. When using RODAC plates, sampling must be done on the same day as the items are sanitized and within 2-4 hours of completion.
d. If item is autoclaved, no additional testing for the effectiveness of sanitization is necessary as long as the autoclave is monitored by temperature and steam monitoring and/or biological indicator monitoring.