

**Standard Operating Procedure**  
*Use of MR Equipment by Potentially Contaminated Animals and  
Decontamination of Associated Equipment*  
*The National High Magnetic Field Laboratory*  
*Florida State University*

**Purpose**

To outline decontamination procedures to prevent cross-contamination by possible microbial agents from external user animals when transported through common procedural areas or through use of common equipment.

Potentially contaminated animals include all those not housed in a FSU LAR vivarium (including animals undergoing quarantine, animals housed at a non-FSU LAR site, animals from unapproved vendors).

**Responsibility**

Personnel trained and approved on the Institutional Animal Care and Use Committee protocol that will be conducting animal experiments, care, and transportation.

**General Procedure for Containment**

Animals not approved for housing in the FSU NHMFL vivarium and all personnel that come in direct contact with those animals must follow the general containment procedure below to avoid cross contamination such animals and animals housed within the animal facilities at the NHMFL. Such animals may never enter the NHMFL animal holding or procedure rooms or transit through that area.

**Animal Cage Requirements**

Animals are required to remain in filter top microisolator cages at all times including transport and holding within the NHMFL facilities when not undergoing anesthesia, imaging, or euthanasia. Additionally, the exterior of the microisolator cages will be lightly sprayed with an appropriate disinfectant (Accel<sup>®</sup>, 70% ethanol) prior to and following the removal and return of animals to their cage. Microisolator filter tops must remain on the cage at all times, even if the cage is unoccupied.

**Transport between facilities:**

To the extent possible, personnel are required to follow the FSU Animal Care and Use Committee operating procedure: "Facility Animal Transportation Guidelines – Campus and Satellite Facilities and non-FSU Destinations".

**Transport within NHMFL:**

A cart will be used to transport the animal cages from the vehicle through the back entrance of the NHMFL closest to the 21.1 T magnet. These animals will at no time enter or pass through the animal facilities within the building.

**Personal Protective Equipment:**

Personnel are required to wear lab coats and gloves at all times when working with animals. Under no condition will personnel enter the animal facilities wearing gloves or lab coats that have previously been in contact with these animals and vice versa. All equipment used will remain in the magnet room throughout the MR session.

### **Removal of Animals:**

External animals will be removed from the NHMFL daily and transported back to their assigned holding area (quarantine or non-FSU vivarium). Animals will not remain on the premises of the NHMFL more than 24 hours.

### **Euthanasia:**

Under conditions where euthanasia is required immediately following MR scans, euthanasia methods outlined in the corresponding IACUC protocol will be carried out within the magnet room. If necessary, a CO<sub>2</sub> compressed cylinder or other equipment will be re-located into the magnet room to be used. All equipment is required to be decontaminated prior to and following euthanasia. When possible, animals will be transferred back to the external holding site for euthanasia.

### **General Procedure for Decontamination**

All equipment that comes in contact with animals must be decontaminated prior to and following each MR session that utilizes external animals not approved to be housed within a FSU LAR animal facility. Equipment includes but is not limited to; work surfaces, carts, induction chambers, coils, restraining devices, and transportation vehicle.

#### **Approved disinfectants**

*Sodium hypochlorite* (household bleach) diluted to 1:10 in water. Bleach solutions must be prepared daily to be optimally effective. There is a required 10 minute contact time with equipment surface to disinfect in which equipment will either be fully submerged or the solution will be re-applied to remain damp for the duration of exposure time. Rinsing with water, saline or 70% ethanol is recommended for metals to avoid corrosion. The equipment will then be dried using disposable towels.

*70% ethanol* will be applied following application of bleach solution. If using as a disinfectant, ethanol solution has a required 10 minute contact time. Equipment previously disinfected with bleach will be wiped off using 70% ethanol to remove any residual bleach in order to avoid subsequent animals coming in contact with the irritant.

*Accel (Accelerated Hydrogen Peroxide)*, diluted 1:40. Prepare and use as per container instructions. Requires a 5 minute contact time.

### **MRI/S:**

Coil, probe, bit bar, animal restrainer, and any other supplies used during MR acquisition that comes in contact with the animal will be cleaned and disinfected using bleach followed by 70% ethanol before and after each MR session. Anesthesia induction chamber will be sanitized with bleach before and after each MR session.

**Work Area Surfaces:**

All hard, non-porous surfaces including tables and transport carts will be disinfected before and after each MR session using bleach followed by 70% ethanol as described above.

**Personal Protective Equipment:**

All gloves will be thrown away and the garbage removed following each MR session. All lab coats will be immediately placed in the autoclave for sterilization prior to and following each MR session.

**Transportation Vehicle:**

When using a personal vehicle, line the vehicle where animal cages will be placed with material that can be thrown away or easily sterilized (ie. paper or clean linens). All hard, non-porous surfaces will be disinfected using the bleach solution or other suitable alternative.

**References**

Florida State University Safety Manual  
Florida State University Animal Care and Use Committee Guidelines and Policies