

# Micro-Isolator Cage Changing Technique

The intent of this document is to describe procedures for Micro-Isolator cage change technique.

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### 1. Introduction

The purpose of this SOP is to help prevent the introduction and/or possible spread of potentially pathogenic organisms to research animals maintained in micro-isolator cages in the Creighton University Animal Resource Facility (ARF).

### 2. Responsibility

The provisions of this SOP apply to all ARF and research personnel who, in the course of their job duties are required to work with research animals housed in sterile micro-isolator cages.

### 3. Procedures

The use of aseptic technique while working with animals housed in micro-isolators using a laminar flow or bio-safety cabinet is essential to help prevent the introduction or spread of pathogenic organisms. Clidox-S (1:5:1), a broad spectrum high level disinfectant, is to be used on all areas of equipment and/or supplies introduced into the laminar flow or bio-safety cabinet. Additionally, Clidox-S is used between cages to disinfect gloves and sleeve protectors. ARF or research personnel should not have contact with similar species of animals of unknown status or known infected animals the same day prior to handling animals.

- a. Autoclaved cages complete with micro-isolator filter top lids, bedding, and feed are to be transferred from clean cage storage to the room which is to be changed.
- b. Personal Protective Equipment (PPE) required when working with animals under the hood includes disposable gown, head cover, mask, shoe covers, latex or non-latex gloves, and sleeve protectors. ARF personnel shall dispose of and change into new sleeve protectors and gloves after changing each rack or sentinel cage. In addition, when two or more investigators share a rack or sentinel cage, between each investigator's animals.
- c. Clidox-S (1:5:1) must be mixed at least 15 minutes prior to its use. Clidox-S, at a 1:5:1 dilution, remains stable for 14 days. Each bottle will be labeled with the both the mix and expiration dates. Do not use Clidox-S outside these dates. ARF personnel are responsible for ensuring adequate supplies of Clidox-S are maintained within rooms at all times. The laminar or bio-safety

cabinet's entire work surface must be sprayed with Clidox-S prior to commencing work within the cabinet. Allow five minute contact time prior to the introduction of supplies or caging. Follow with Isopropyl Alcohol or water rinse. Re-spray the work surface with Clidox-S. The work surface must remain wet with Clidox-S for the duration of cage change or procedure. Rewet the work surface as necessary. All equipment and supplies introduced into the cabinet must have all exposed surfaces sprayed with Clidox-S. This includes containers of water bottles and feed. Additionally, Clidox-S is to be poured into the tray under the hood and used for dipping gloved hands and forceps.

#### 4. **Cage Changing Procedures**

- a. Cages to be changed are removed from the ventilated rack (cage rack if static cages) one at a time. The exterior surfaces of "soiled" and "clean" cages are always considered to be dirty. Whenever an exterior surface is touched, gloved hands **MUST** either be sprayed with or dipped into the Clidox-S tray **prior** to touching any inside surface area of the dirty or clean cage. Gloved hands must always be kept wet with Clidox-S. Whenever the sleeve protectors leave the cabinet, the sleeve protectors must be re-sprayed with Clidox-S prior to returning to the cabinet.
- b. Transfer the cage card from the dirty cage to the clean cage.
- c. Remove the filter lids from the clean and dirty cages, making sure that the interior surface of the lid does not come into contact with the cabinet surface. **DIP HANDS INTO OR SPRAY WITH CLIDOX-S.** Rotate the wire bar lid on clean cages to allow for the transfer of animals. Transfer animals using "wetted" gloved hands or forceps located in the Clidox-S container.
- d. After animals have been transferred to clean caging rotate wire bar lid on clean caging to secure position. **DIP HANDS INTO OR SPRAY WITH CLIDOX-S.** Inspect water bottle to ensure it is functioning properly. **REMEMBER, IF AT ANY TIME GLOVED HANDS OR FORCEPS COME INTO CONTACT WITH ANY SURFACE WHILE UNDER THE HOOD EXCEPT FOR THE INTERIOR OF THE CLEAN AND/OR DIRTY CAGES, YOU MUST DIP YOUR HANDS INTO OR SPRAY WITH CLIDOX.**
- e. Replace filtered micro-isolator cage top.
- f. Replace cage lid on dirty cage. Remove dirty cage from hood.
- g. Return changed cage to the **same location** in ventilated or cage rack. Ensure that vented cages are properly "plugged into" the vented rack.
- h. Secure new dirty cage and repeat process starting with **a.** above.
- i. **\*IMPORTANT\*** When finished, wipe down all hood or bio-safety cabinet interior surfaces with Clidox-S followed by distilled water or Isopropyl Alcohol. Failure to do so will cause deterioration of the surface areas due to prolonged contact with Clidox-S.
- j. **\*ARF Personnel Only:** After caging change is complete from a rack (or investigator within a rack) place the clean sentinel cage under the hood or bio-safety cabinet. Collect an approximately 1 TB sample of bedding/feces from each dirty cage and place into new sentinel cage. Note: In most cases, sentinels are not exposed to animals that have been treated with potential hazards. Refer to Special Animal Safety Protocol (SASP) on the room door

for specific instructions. The hood or bio-safety cabinet must then be disinfected with Clidox-S and clean sleeve protectors and gloves donned.

**5. SPECIAL CONSIDERATIONS**

The effectiveness of the micro-isolator system is entirely dependent upon proper procedures being followed whenever a micro-isolator cage is opened. **NEVER** open a cage outside the bio-safety cabinet and **NEVER** open more than one cage at a time. These procedures listed above **MUST** be followed at all times.

**NO EXCEPTIONS! NO SHORTCUTS!**