



TITLE:

Procedures for Animals Exposed to Biohazards and Maintained in the Animal Facility

PURPOSE:

The purpose of this SOP is to explain the procedures for maintaining animals exposed to a biohazard and housed in the animal facility. A biohazard is defined as a harmful agent and a risk to human beings or their environment, especially one presented by a toxic or infectious agent. These procedures must be followed when Animal BioSafety Level (ABSL) 2 containment practices for replication deficient viral vectors (RDVV) and other ABSL2 materials and agents are used within the animal facilities. ABSL1 materials and agents require less stringent contaminate procedures and will also be described in this SOP.

PROCEDURES:

- A. All investigators working with BioSafety Level (BSL), ABSL and RDVV agents in the animal facility are required to contact the Project/Facility Manager (P/FM), Facility Veterinarian (FV) and/or the Administrative Manger (AM) before beginning experiments.
 1. The P/FM, FV and/or AM should schedule a meeting date and time to discuss this SOP with the investigator and other individuals working with the hazard. Prior to the meeting the AM should send a Cubicle Request form to the investigator. This form must be completed by the investigator and returned prior to the meeting date. This form is required for all cubicle users and must have accurate information regarding the need for space, study requirements and other details pertaining to the animals. Refer to SOP 3110 Cubicle Request Form for more details.
 2. At the meeting the following details should be decided upon regarding the handling of cages and animals, where the animals are to be housed after administration of the hazard and any expectations of what may occur with the animals after administration.
- B. Animal housing will depend on ABSL requirements for the Biohazard being administered.
 1. Animals that are approved to be housed at ABSL1 can be housed in the investigator's regular animal holding room as the animals and cages do not require special handling. If investigators have questions or need additional assistance contact your Safety and Health Specialist (http://dohs.ors.od.nih.gov/safety_health_specialists.asp) and refer to your ASP for specific information.
 2. The investigator should write on the cage card the name of the agent that was administered with the date the animal(s) were exposed.
 3. The investigator should contact the P/FM, FV or AM with any questions related to the health of the animal or housing.
- C. Animals housed at ABSL2 must be isolated from the regular animal holding rooms by being held in the cubicle room designated for housing animal hazards. A tour of this cubicle will be given to the individual or group, as well as instructions on the use of the cubicle, once the meeting (A2 above) has concluded. Access is given to the individuals after the tour. Refer to SOP 1250 NINDS Managed Animal Facility and Animal Room Access for more information.
- D. Posting animal rooms and areas where the ABSL2 exposed animals are being held.

1. The investigator must place a Hazard Warning Sign (refer to Attachment SOP 2300A Hazard Warning Sign – COPY and Biohazard Flag) on the outside door of the procedure or animal holding room where the hazard is in use. Any room or area in which animals are being housed or used for experimental procedures using ABSL2 materials/agents must be posted with a Hazard Warning sign (for more information contact the Safety and Health Specialists).
 2. The Hazard Warning Sign must display at all times the following information:
 - i. The universal biohazard symbol.
 - ii. Specific agent or material in use and at what ABSL.
 - iii. Person(s) to contact; must list at least two people.
 - iv. Describe precautions necessary for entry; including the minimal requirements for Personal Protective Equipment (PPE) for the room, area and animal/cage handling. This information will be written on the posting below the heading: Special Procedures or Precautions of Entry.
 3. Animal holding rooms must be posted at all times when hazards are present (if studies will be repeated frequently the animal holding room door posting may remain). The same sign used on the procedure room may be placed on the animal holding room where the animals/cages are housed.
 4. Procedure Rooms must be posted during the time that animals and cages are present.
 5. The Hazard Warning Sign must be placed on the outside of the door when working with BioSafety Level (BSL) and ABSL agents. When work has been completed and the area and equipment has been decontaminated the sign may be removed from the door.
- E. Administration or Introduction of the Biohazard:
1. The following precautions must be used when administering any biohazard material or agent. Investigators should refer to their ASP for safety precautions, procedures and requirements.
 2. All biohazard agents must be in solution form ready for administration prior to bringing the agent into the animal facility.
 3. Contact the P/FM, FV or the AM for additional PPE (sleeves, gloves, masks and face shields) for use during administration of the hazard.
 4. Biological Safety Cabinets (BSC) are located in each Cubicle Suite and Procedure Rooms PRN2 and PRS2 for investigator use. For biohazard administration it is suggested that the BSC in Cubicle Suite one (1) be used as this will be where the ABSL animals will be housed after the procedure is complete, unless a BSC is available in the investigator's lab outside of the animal facility. Refer to SOP 6610 - Rodent Cage Change Stations and Biological Safety Cabinets Operation and Maintenance for details on operation.
- F. Identifying cages post administration or introduction of a Biohazard:
1. Cages will be identified with a Biohazard Flag. The investigator will hang a Biohazard Flag on the cage; refer to SOP 2300 flag – Biohazard Flag – Replication Deficient Viral Vector located at <S:\Animals\Cage Flags Labels and Cards\Flags\2300 flag – Biohazard Flag – Replication Deficient Viral Vector.doc>. The investigator must record, on the flag, the Biohazard agent name, the date exposed and the date the biohazard expires.
 2. The date of injection and the agent name must be written on the animal's cage card.
 3. Most Biohazards expire seventy-two (72) hours post exposure; however the expiration is outlined in the ASP by the NIH Safety Office. If you are not sure refer to the ASP or the NIH Safety Office.

- G. Handling specifics for handling animals and caging exposed to ABSL2 agents/materials:
1. Once the cage has been flagged, it will be handled after all other cages following the Handling Procedures, PPE Requirements, and Disposal Procedures listed on the back of the flag.
 2. Cages must only be opened and animals handled within a BSC.
 3. All equipment must be chemically decontaminated before removing from the BSC. Refer to SOP 6133 Quatricide, Clidox, MB10 and Bleach – Misting Stations Operation and Maintenance for chemicals used for decontamination.
 4. Disposable materials should be placed in an orange biohazard bag, sealed and sprayed with disinfectant before removing from the BSC and placing in a Medical Pathological Waste (MPW) box for disposal as MPW.
 5. Sleeve covered arms and gloved hands should be sprayed off with disinfectant before removing them from the BSC; sleeves and gloves can then be disposed of as MPW.
 6. Cages or equipment to be autoclaved must be placed in an orange biohazard bag following the procedures in SOP 6411 Autoclaves – Operating Large Vacuum Getting Units for further information.
 7. If you are working with RDVV at an ABSL that is required to be housed at an ABSL2 for an undetermined time frame, the cage flag should read “will not expire” next to Hazard expires on. An example is a RDVV that will continue to shed from the animal.
- H. Carcasses must be double bagged using biohazard bags. The outer bag must be securely closed and then sprayed with disinfectant prior to removing from the BSC. The bag containing the carcass should then be placed into the appropriate container for disposal as MPW or left inside the BSC for the investigator to pick up. The investigator should be notified of any dead animals found and, if left for pick up, the investigator will have three (3) hours to retrieve the carcass from the BSC. After 3 hours the carcass should be disposed of as MPW by the AHCS staff. Refer to SOP 3500 Animal Mortalities and Disposition of Animal Carcasses for more information.
- I. If blood or tissue samples are removed from the animal facility, the samples must be placed into a secondary container containing absorbent material prior to transport from the procedure area. The transport container must be durable and leak-proof, and sprayed with disinfectant prior to removal from the BSC. The container must also be labeled by writing “biohazard” before being removed from the procedure area.
- J. For more information refer to the links below.
1. Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5th Edition <http://www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm>.
 2. NIH Guidelines for Recombinant DNA Research, http://oba.od.nih.gov/rdna/nih_guidelines_oba.html.
 3. NIH Policy Manual 3035 - Working Safely With Hazardous Biological Materials, <http://www1.od.nih.gov/oma/manualchapters/intramural/3035/>.
 4. NIH Policy Manual 3034 - Working with Hazardous Materials, <http://www1.od.nih.gov/oma/manualchapters/intramural/3034/>.

REFERENCES:

1. SOP 3110 Cubicle Request Form.
2. SOP 1250 NINDS Managed Animal Facility and Animal Room Access.
3. Safety and Health Specialists at http://dohs.ors.od.nih.gov/safety_health_specialists.asp.
4. SOP 6610 - Rodent Cage Change Stations and Biological Safety Cabinets Operation and Maintenance.

5. SOP 3202 - Cage Flag and Card System for Identifying Animal Cages in the NINDS AHCS Managed Animal Facilities.
6. SOP 6133 Quatricide, Clidox, MB10 and Bleach – Misting Stations Operation and Maintenance.
7. SOP 6411 Autoclaves – Operating Large Vacuum Getting Units.
8. SOP 2300 flag – Biohazard Flag – Replication Deficient Viral Vector located at <S:\Animals\Cage Flags Labels and Cards\Flags\2300 flag – Biohazard Flag – Replication Deficient Viral Vector.doc>.
9. SOP 3500 Animal Mortalities and Disposition of Animal Carcasses.
10. Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5th Edition <http://www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm>.
11. NIH Guidelines for Recombinant DNA Research, http://oba.od.nih.gov/rdna/nih_guidelines_oba.html.
12. NIH Policy Manual 3035 - Working Safely With Hazardous Biological Materials, <http://www1.od.nih.gov/oma/manualchapters/intramural/3035/>.
13. NIH Policy Manual 3034 - Working with Hazardous Materials, <http://www1.od.nih.gov/oma/manualchapters/intramural/3034/>.

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Attachments:

1. 2300A Hazard Warning Sign – COPY and Biohazard Flag.

HAZARD WARNING SIGN ANIMAL BIOSAFETY LEVEL 2



ANIMAL BIOSAFETY LEVEL 2

Hazard Identity: Biohazard agent name.

[Building: Animal Holding Room: Date Posted:]

Special Procedures or Precautions of Entry:

All cages labeled as ABSL2 must be handled last.

All cages labeled as ABSL2 **must NOT be opened within the animal holding room.**

Follow PPE requirements as listed on the Biohazard cage flag.

All cages labeled as ABSL2 must be removed from this room and brought to a procedure room equipped with a Biological Safety Cabinet (BSC). The procedure room must be posted with a Hazard Warning Sign for Procedure Rooms during use, and cages should only be handled within the BSC.

Notice	Call or See	Bldg	Room	NIH Phone	Home/Cell Phone
Entry or Advice (Principal Investigator)	PI Name				
Emergency (Ordering Investigator)	OI Name				

SOP 2300A Hazard Warning Sign – COPY and Biohazard Flag

COPY of SOP 2300 flag – Biohazard Flag – Replication Deficient Viral Vector



BIOHAZARD Agent: _____

This cage contains animals that have received a Biohazard and is considered an **ABSL2** hazard until 72 hours after initial administration.

Date exposed: _____ **ABSL2** Hazard Expires on: _____

After the ABSL2 Hazard expires, the AHCS will change this cage, remove this flag and return this cage to the original animal holding room unless noted differently.

Special handling instructions listed on the back of this card must be followed.

Handling procedures: Cage should be **handled last**. Cages should **NOT** be opened within the animal holding room. All manipulations will be conducted within a **Biological Safety Cabinet (BSC)** in the **procedure room**, and the procedure room must be posted.

PPE requirements: PPE must be worn when handling these cages in the BSC. **(circle choice below)** *If nothing listed, follow the AHCS Procedures.*

gloves, sleeves, lab coat, shoe covers, head cover, mask

Disposal procedures: **All items must be sprayed off with Clidox before removal from the BSC.** Disposable items will be disposed of as **MPW**.

Non-disposable items must be placed in autoclavable bags and chemically decontaminated before being removed from the BSC and taken to cagewash. Cages must be **autoclaved** before being processed through cage wash.