

## Occupational Health and Safety (OHS) Standard Operating Procedure

### For Individuals Working with Vaccinia or Exposed to Animals Infected with Vaccinia Virus

#### 1. Affected Individuals:

All individuals who handle vaccinia virus or animals infected with vaccinia virus, all individuals who enter a room in which animals infected with vaccinia virus are housed, and all individuals who are listed as a Principal Investigator on research protocols.

Vaccinia viruses covered under this protocol include all strains of wild type and recombinant vaccinia virus which are designated as Risk Group 2.

#### 2. Facility Requirements:

Laboratories where vaccinia is being manipulated and facilities in which animals infected with vaccinia virus are housed must meet all requirements for BSL-2 and ABSL-2 respectively.

#### 3. Medical Requirements:

- 3.1 Research Animal Resources (RAR) management, Facilities Management (FM) management, the Institutional Biosafety Committee (IBC), and the Principal Investigators will identify workers who handle vaccinia virus, work with animals infected with vaccinia, or enter rooms in which infected animals are housed.
- 3.2 The individuals identified in 3.1 must be enrolled in the University of Minnesota Animal Research Occupational Health Program (ROHP) and must complete medical evaluation and training prior to being exposed to animals infected with vaccinia. If an individual is already enrolled in ROHP, potential exposure to vaccinia as described above must be reported to the Office of Occupational Health and Safety.
- 3.3 The level of potential exposure of each individual (e.g., enters room only, changes cages, inoculates animals, or works with virus) to vaccinia or vaccinia infected animals must be clearly stated in the research protocol.
- 3.4 Vaccination is required for ALL direct work with vaccinia. Direct work includes work with viral cultures, materials exposed to viral cultures,

body fluids or tissues from infected animals or patients and any other potentially vaccinia infected material.

- 3.5 Individuals who will not handle vaccinia virus or infected animals, but whose potential exposure is entering a room with infected animals, must be enrolled in ROHP and medically cleared but do not require a vaccination. However, based on professional judgment, the Occupational Health Provider may offer or require vaccination for individuals not otherwise required to be vaccinated.
- 3.6 The Office of Occupational Health and Safety or the Occupational Health Provider may issue specific individualized work restrictions or require additional personal protective equipment (PPE) if the circumstances warrant it.
- 3.7 As part of the occupational medical evaluation and counseling, information will be provided about the availability of a vaccine. Those who meet immunization criteria will be offered the immunization. Individuals who wish to be vaccinated must inform the medical Provider and their supervisor. Individual requests for immunization will be reviewed on a case-by-case basis based on a complete job and medical history review.
- 3.8 Women who are, or are planning a pregnancy may request a consultation through the Office of Occupational Health and Safety or the Occupational Health Provider. Consultation will be provided through HealthPartners, Riverside.
- 3.9 Personnel should report any significant changes in their health status to the University's occupational health provider. A request for a medical appointment may be made by contacting the Office of Occupational Health and Safety or the Occupational Health Provider.

#### **4. Requirements for entry into a room in which vaccinia virus is manipulated or animals infected with vaccinia virus are housed.**

- 4.1 All personnel who will work with vaccinia virus or enter a room in which animals infected with vaccinia virus are housed must attend the University's informational education session on vaccinia virus. This is offered through the Office of Occupational Health and Safety.
- 4.2 Individuals who are not vaccinated but have obtained medical clearance are permitted to enter a room in which animals infected with vaccinia virus are housed in order to:
  - 4.2.1 Change cages two weeks after animals have been infected; or
  - 4.2.2 Provide facility maintenance and cleaning services when animals are confined in cages.
  - 4.2.3 Employees who have NOT been immunized must not engage in any activities involving the use of sharps or directly handling viral cultures.

- 4.3 Non-RAR or non-research personnel must be admitted into the room by RAR staff.
- 4.4 All Facilities Management (FM) employees, individuals engaged in equipment repair and/or certification and outside vendors must meet the guidelines specified in section 3.4 and 4.2.
  - 4.4.1 These individuals may enter without immunization when the above requisite conditions are met (4.2.1 to 4.2.3).
  - 4.4.2 These employees are required to receive all training and demonstrate a clear understanding of when entry is prohibited.
    - 4.4.2.1 Training must be provided in a format and level that is commensurate with their knowledge of biological hazards and risks.
- 4.5 Hands must be thoroughly washed with soap and water after discarding PPE and before exiting the room.

**5. Requirements for working with vaccinia virus, opening cages, changing cages, or handling animals which have been infected with vaccinia virus.**

- 5.1 Cages will not be changed by RAR staff for a period of two weeks following the infection of an animal. Changing externally located water bottles is permitted.
- 5.2 All personnel who will open cages, change cages, or handle animals infected with vaccinia virus must be enrolled in ROHP and authorized by the Occupational Health Provider to perform this work.
- 5.3 All personnel who will change cages for animals infected with vaccinia virus must complete specific training in addition to the training described in section 4.1 above. The content of this training and its completion must be documented for each individual.
- 5.4 All manipulations using vaccinia infected animals, including all work with infected tissues, and cage changing must be performed in a biological safety cabinet.
- 5.5 When working in the shared procedure room in the CCRB ABSL-2 suite, a sign must be posted on the door indicating that vaccinia virus is present and that only authorized personnel may enter.
- 5.6 Required PPE for personnel who will perform these tasks include;
  - 5.6.1 Disposable Tyvek jumpsuit (for staff performing inoculations)
  - 5.6.2 Disposable long sleeved gown
  - 5.6.3 Procedure mask
  - 5.6.4 Disposable full face shield (for staff performing inoculations)
  - 5.6.5 Double latex or nitrile gloves
  - 5.6.6 Disposable hair cover
  - 5.6.7 Disposable shoe covers
  - 5.6.8 Disposable Tyvek sleeves
- 5.7 Dirty cages must be placed in autoclave bags in the biosafety cabinet.

- 5.8 The exteriors of autoclave bags holding dirty caging must be sprayed with 10% bleach for thirty minutes prior to being taken out of the room.
- 5.9 The biosafety cabinet surfaces must be decontaminated with 10% bleach for thirty minutes. The bleach decontamination procedure should be followed by a wipe with 70% alcohol to prevent damage to the work surface of the biosafety cabinet.
- 5.10 All PPE must be removed and disposed of in the anteroom prior to exiting the ABSL-2 suite. In facilities where there is not an anteroom, PPE must be discarded in the animal housing room upon exiting.
- 5.11 All experimental procedures must have received prior approval from the Institutional Biosafety Committee (IBC).
- 5.12 The IBC will not approve protocols involving vaccinia virus until all personnel listed in the protocol have been approved by OHS to work with vaccinia virus.
- 5.13 Any object with a sharp or broken edge with the potential to cause a cut or laceration should be removed as soon as reasonably possible. This includes broken plastic with sharp edges.
- 5.14 OHS will provide the names of all authorized research personnel to the IBC along with any required work restrictions.