SAFETY PROCEDURE/ GUIDELINES	NUMBER: 99- 01
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SUBJECT: Operational guidelines for animal infections involving L2 human or animal viral vectors or recombinant vectors containing sequences from human or animal pathogens.	**EFFECTIVE DATE: June 1999**
	SUPERCEDES: Original
APPLIES TO: All departments	**APPROVED**: **University Biosafety Committee**

This corporate guideline/procedure is intended as a minimum requirement to be applied by a research supervisor in collaboration with DOHS and ACVS

Animal infections with pathogenic viruses involve risk for personnel involved in the experimental work particularly during the initial injections but also during the maintenance of the animals through potential exposure to infectious aerosols which may be released from contaminated bedding or from direct innoculation by animal bites and scratches or injuries from cages or instruments. Non-infectious virus may recombine to produce an unexpectedly infectious virus. Sero conversion may occur to gene products incorporated into a recombinant virus. For these reasons the following precautions are to be followed to ensure that any risks involved in this type of experimental work are managed appropriately.

The University Biohazard Sub-Committee has approved the following precautions based on the requirements of the Health Canada *" Laboratory Biosafety Guidelines" 2nd ed., 1996 and Containment Standards for Veterinary Facilities, Agriculture and Agri-Food Canada, 1996.*

1. Registration.

The University Biohazardous Agents Registry Form must be completed and signed by a representative of the Biohazards Sub- Committee for the recombinant virus before submitting the Application to Use Animals to the Animal Use Sub-committee. The virus to be used in the animal must be declared on the safety page in the animal use protocol application under biohazards and the safety procedures described in this document must be referred to.

2. Training.

Graduate students, Post Doctoral fellows and technicians who perform work with a Level 2 virus must attend the University biosafety training sessions before starting to work with the virus. If other personnel will be working with the virus or virus infected animals on the project they also require biosafety training. All personnel handling the animals must also attend the Course in Animal Care and Use given by Animal Care and Veterinary Services (ACVS).

3. Hazard identification.

The Principal Investigator is responsible for informing all staff associated with the project including ACVS animal care staff about the nature of the experiment, the viruses involved and conducting training in the specific safety procedures required by the protocol.

4. Medical Surveillance

Personnel working with a virus or virus infected animals must submit a Position Hazard Form (PHF) indicating the virus(es) to be used to the Staff/ Faculty Health Office. RRI personnel should use the OH service designated by RRI administration. If immunization is required, proof of acceptable titre levels must be supplied to the university veterinarian before work is started.

5. Containment requirements.

All manipulations with a live virus, and all subsequent work with unfixed animal tissues must be carried out in a Class II biological safety cabinet using Level 2 containment practices as stated in *" Laboratory Biosafety Guidelines," Health Canada, 2nd edition, 1996.* Animal injections using live virus must be either carried out in a Class II biological safety cabinet or if this is impractical (due to the size of the animal), a NIOSH approved HEPA filtered respirator must be worn by all personnel in the room. (see # 8 below). Please consult DOHS about respiratory protection when planning experimental procedures.

6. Animal Housing Requirements
Infected animals must be appropriately housed. The caging which is appropriate will be decided by consultation between the Principal Researcher, Biosafety Officer (BSO) and The Director, ACVS on a case by case basis. Microisolator caging or filtertop caging will be required where infectious virus may be spread by the infected animals.

6. Waste Disposal and Decontamination

a)The bedding changes should be carried out inside the biological safety cabinet where possible. The soiled bedding can be put into a biohazard bag, sealed, double bagged and disposed of by incineration. (please see instructions for incineration procedures)

b)If it is not possible to change the soiled bedding inside a biological safety cabinet because of the size of the cages, respiratory protection will be required as in # 8 (above) for all personnel. The soiled bedding can be put into a biohazard bag and sealed. This must then be double bagged and disposed of by incineration.
(please see instructions for incineration procedures)

c)Contaminated small cages (including wire racks and water bottles) must be decontaminated by disinfection before leaving the animal housing room to be washed. For disinfection, cages must be immersed in a disinfectant proven effective for the virus being used (e.g Quatricide PV-15 or CLIDOX for Adenovirus).The cages must be completely immersed for the documented time for decontamination with the virus in use. The cages may then be drained and removed from the room for cage washing. Larger cages must be sprayed thoroughly with disinfectant and left wet for the required time for decontamination The disinfectant is to be diluted according to the manufacturers specifications i.e. for Quatricide PV-15: 1/2oz : 1gal water. Disinfectant must be freshly made up. Spent disinfectant can be disposed of down the drain. After disinfection the cages may be taken out of the L2 animal room and taken to the cage washer for

further processing. Other disinfectants may be used but must be proven to be effective on the virus being used. Check with Biosafety Officer before using an alternative disinfectant.

NB Disinfectant concentrates are toxic. The user must wear rubber gloves, overgown and eye protection. Respiratory protection may be required. Please read the MSDS before use.

d) Used water bottles must be emptied into a suitable disinfectant e.g. bleach and a minimum of 10 minutes allowed before the water is disposed to the sewer. Water bottles must be autoclaved or disinfected prior to washing. Uneaten chow from the used cages must be double bagged and disposed of directly to the incinerator for disposal.

7. Protective Clothing

Overgowns or lab coats must be provided for dedicated use in the Level 2 room. These gowns should be kept in the ante room and worn on entry to the room and removed on exiting. Shoe covers and gloves must also be worn. Head covers may also be required. Reusable gowns are suitable but they must be autoclaved before washing. Disposable clothing must be discarded as Biohazardous waste and autoclaved before disposal or double bagged and incinerated.

8.Additional Protection

If additional respiratory protection is required a HEPA respirator e.g. 3M 9970 or half face respirator with HEPA cartridges must be worn when working with the infected animals.

Please consult DOHS at ext. 2036 when planning experimental work to determine the most appropriate respirator and for respirator fitting.

9. Decontamination.

On completion of work with the virus the biological safety cabinet, all cages, racks and equipment and the entire room must be decontaminated before the room is used for another purpose.

Special Notes

+ Any changes to the above procedures must be approved in writing by the BSO and the Director ACVS in consultation with the PI. The determination of the duration of infectious status of the animals and therefore the requirement for full implementation of the above procedures will be made by the Biohazards Subcommittee and the Biosafety Officer in collaboration with the Principal Investigator.

++ Work with animal pathogens may require additional barrier precautions to protect animals elsewhere in the animal facility. The Director, ACVS, must be consulted before work with an animal pathogen is considered.

+++ The ability of a virus to infect and replicate inside an animal may be decreased due to genetic modification which may reduce containment requirements. Supporting documentation for evidence for reduced containment must be submitted to the BSO for the Biosafety Committee for assessment.