

Title: <b>York University Biosafety Guideline: Safe Handling of Retroviral Vectors.</b>			
Dept: Department of Occupational Health and Safety	Reference Number: DOHS-1001	Last Revised: May-2010	Page: 1 of 2

This is a general summary of the safety precautions to be followed when working with retroviral vectors.

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**Containment Level:**

All handling of retroviral vectors require Containment Level Two (CL-2) practices, with additional precautions.

**Lab Practices:**

All operational practices described in the Laboratory Biosafety Guidelines (Section 3.1.1 and 3.1.2) will be strictly followed by all persons who are working in the lab space.

In addition:

Training

- All persons in the lab will review these guidelines and be given training, by the Principal Investigator (PI) or person delegated by the PI, so they are aware of the risks associated with retroviral vector work, how to minimize exposure, and how to respond in the case of an exposure incident.
- All persons will receive emergency/spills response training.

Personal Protection Equipment (PPE)

- Persons experimenting with the retrovirus/vector will dedicate a lab coat for working with retroviral vectors. Contaminated labcoats (i.e. due to spill/exposure) will be disinfected immediately (e.g. bleached and washed OR autoclaved and washed), and on a regular basis.
- Double-gloving is to be used during certain procedures where infection is possible (e.g. during production of infectious viruses).
- Notification will be given to other persons in the lab when active work begins.

Safe Handling

- Where possible, dedicate a biological safety cabinet (BSC) and incubator for all retroviral work.
- All retroviral vector handling will be performed in a certified BSC. Waste tips etc... are to be collected in a labeled biohazard waste bag to be autoclaved before disposal. The waste bag will be sprayed with 70% ethanol before removal from the hood and placed in another waste bag outside of the hood.
- The autoclave used must undergo regular biological monitoring.
- Waste bags and/or containers will be clearly labeled with a biohazard sign. Biohazard signs will be removed after sterilization (see DOHS Biohazardous Waste Disposal Guidelines).

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Page:

2 of 2

- All items being removed from the biosafety cabinet are considered contaminated and will be wiped down/sprayed with 70% ethanol or an appropriate disinfectant.
- Absolutely no sharps (needles, glass pipettes) or glass containers will be used. Plastic, filtered, pipette-tips must be used.
- During aspiration, a plastic vacuum flask, secondary plastic vacuum flask, HEPA filter, and non-collapsible tubing will be used. The total bleach added will ensure a minimum concentration of 1% bleach in the waste flask. During disassembly, flasks and tubes will be soaked in 1-10% bleach (minimum. 30 minutes) to provide adequate disinfection.
- During centrifugation, only a centrifuge with a sealed rotor or safety cups will be used. Samples will sit in the centrifuge for 5 minutes before opening to allow aerosols to settle.
- Loading and unloading of centrifuged samples will be done in a biosafety cabinet. Screw-caps with O-rings will be used.
- The centrifuge will be maintained (e.g. inspected, cleaned and disinfected) on a regular basis.
- Strict decontamination of all work surfaces must be followed at the completion of experimentation and the end of each day, using 1-10% bleach followed by a wipe-down with 70% ethanol.
- If any samples are to be transported in hallways, secondary containment must be used. The outer surface of the secondary container will be labeled with a biohazard symbol and "Caution: Retrovirus", and wiped with a disinfectant before transportation.
- Lab doors will be closed and locked when not in use. Samples will be stored in locked freezers labeled with a biohazard symbol. The container holding the samples will be labeled "Caution: Retrovirus".

#### Labeling

- Signage will be used "Caution: Retrovirus" on incubators, biosafety cabinets, centrifuges, and microscopes and anywhere else there is a potential for retroviral contamination.