The following summarizes the safety precautions to be followed when working with viral particles and any viral vector system.

**Containment Level:**
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 viral 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 will dedicate a lab coat for working with viral vectors/particles. 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 viral work. Do not use other cell lines at the same time.
- All viral vector/particle handling will be performed in a certified BSC. Waste tips etc... are 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 efficacy testing.
- 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).
- 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 5% bleach in the waste flask. During disassembly, flasks and tubes will be soaked in 5-10% bleach (minimum. 1 hour) to provide adequate disinfection.
PLACE FLASK IN FUME HOOD WHEN TREATING WITH BLEACH!

- 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 5-10% bleach/1 hour 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 e.g. “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 e.g. “Caution: Adenovirus”.

Labeling

- Signage will be used on incubators, biosafety cabinets, centrifuges, and microscopes and anywhere else there is a potential for viral contamination.