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| PI: |  | C:\Users\chips.CAMPUS\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\BZS5U11S\Biohazard_symbol_(red).svg[1].pngBiosafety Level 2 |
| Agent(s): | Lentivirus |
| Date SOP Created: |  |

*Instructions: Insert specific details pertaining to your research and delete irrelevant procedures; contact EH&S at 642-3073 or OLAC at 642-9232 as needed for assistance.*

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| Hazard Information | *Work with lentiviruses and other agents handled at biosafety level 2 require a BUA and may only be performed in reserved, pre-approved locations on campus. See* [*http://ehs.berkeley.edu/biosafety*](http://ehs.berkeley.edu/biosafety) *or contact EH&S at 642-3073 for authorization and biosafety training prior to beginning work.*  Lentiviruses are a subset of retroviruses. HIV-1 is the best known example of this subset of retroviridae and is the cause of AIDS in humans. They integrate into active genes in the host cell chromosomes, but not into transcriptional start regions. They can infect dividing and non-dividing cells. They have the potential of causing insertional mutagenesis. They express their genes in a stable fashion long term. Just as the wild type viruses, lentiviral vectors transduce both dividing and non-dividing cells.  Avoid direct contact with skin and mucous membranes of the eyes, nose and mouth. No food or drink is allowed in the lab. Remove gloves and wash hands carefully before leaving. Please note, the highest risk of human infection is via accidental parenteral injection; careful handling and disposal of sharps is required. Deposit used sharps directly into a rigid sharps container. **NEVER** recap needles. Hazards of aerosol exposure are unknown.  Hazards specific to your vector and route of administration: |
| Personal Protective Equipment (PPE) | when working in a biosafety cabinet:  Lab coat  Gloves  when working with animals:  Disposable gown  Gloves  when working outside a biosafety cabinet include:  Eye protection  Surgical mask or face shield (disposable)  *Additional PPE specific to your research:* |
| Preparation | *List procedures used. Be specific about the physical form (solid, liquid, etc.) and locations for work (bench top, fume hood, biosafety cabinet), and personal protective equipment (PPE) to be worn when handling the material.*  Viral vectors will be purchased/obtained from *(List provider)*. Package will be kept intact with shipping documentation and/or maintained in double containment with proper labeling, including PI name and contact information.  *Other specific preparation steps (with location):* |
| Transportation | Virus will be carried in an easily decontaminated, leak-proof, secondary container labeled with a biohazard symbol and PI name and contact information to NAF 120F, LSA 640, or Minor 599E *(choose location or list approved location)*. |
| Use | While working in NAF 120F, LSA 640, or Minor 599E *(choose location or list approved location)* with virus and if handling animals within 72 hours post-infection, the following PPE must be worn: **Disposable Gown, Gloves, Face Shield (Disposable).**  *Description of infection procedures:* |
| Disposal and Disinfection If unsure, contact EH&S at 642-3073 to determine disposal procedures. | * Decontaminate all work surfaces and equipment with 70% ethanol or 10% bleach. * All used sharps must be immediately placed into a rigid sharps container. DO NOT recap needles. When 2/3 full, these containers should be placed in a red barrel for disposal as biohazardous waste. * All potentially contaminated lab debris should be collected in a red biohazard bag in a rigid container within NAF 120F, LSA 640, or Minor 599E *(choose location or list approved location)* for disposal as biohazardous waste. * Any waste ethanol, if not absorbed, should be decanted from solid waste and disposed as chemical waste, see [*http://ehs.berkeley.edu/hazardous-materials*](http://ehs.berkeley.edu/hazardous-materials) for guidance. * Infectious liquid waste, including excess suspended virus, will be treated to create an overall 10% bleach solution for 30 min, and may then be drain disposed. * After infection, disposable cages may be returned directly to standard ABSL1 housing but the cage card (obtain from OLAC) must be labeled to indicate the hazard type, agent, date of administration, and that OLAC should not change the cage for 72 hours post-final injection. Complete the “OLAC Do Not Change” card with PI responsible cage change dates as applicable. After 72 hours post final treatment, animals can be transferred to clean standard cages by the researcher within a functioning biosafety cabinet. Within the biosafety cabinet, used cages and bedding should be bagged within biohazard bags and disposed of as trace biohazard waste. Water not contaminated with lentivirus can be disposed of by normal OLAC procedures. |
| Spill Response and Emergency Procedures | Susceptibility to disinfectants: - 1% sodium hypochlorite, 2% glutaraldehyde, formaldehyde, ethanol  Recommended disinfectants: 10% household bleach or 70% ethanol with proper contact time  *Disinfectant to be used:*  Injury: If eye or skin contact occurs, wash affected areas with copious amounts of water for 15 minutes and IMMEDIATELY seek medical advice. If inhaled, move individual to fresh air and IMMEDIATELY seek medical advice, call 911. [Rescue breathing, CPR may be needed.] If swallowed, seek IMMEDIATE medical advice. Care within the first **TWO** hours is imperative.Report the incident to your supervisor and the Occupational Health Clinic at 2-6891 for follow up.  Medical attention during normal business hours: Tang Center Urgent Care (2-3188 or 3-7197); after hours go to urgent or emergency care: Alta Bates Hospital at 2450 Ashby (204-4444). |
| Hazard Communication (signs, cage cards, etc.) | All researchers handling this material must read and sign this document.  After 72 hours, animals should be transferred to clean cages by the researcher within a functioning biosafety cabinet and the orange “OLAC Do Not Change” card should be removed to indicate OLAC may resume care.  EH&S and an OLAC veterinarian must review and date this SOP prior to starting this work within an animal facility. Obtain cage cards, disposable cages and labels from OLAC by submitting a special request at least 7 days in advance. During injections this SOP must be posted in a plastic sleeve on the door of NAF 120F, LSA 640, Minor 599E *(choose location or list approved location)* to notify OLAC staff and other personnel. |
| Unique Instructions | Coordinate use of NAF 120F, LSA 640, Minor 599E *(choose location or list approved location)* with the OLAC Facility Manager.  *Other unique procedures:* |
| Additional Information or References | Refer to applicable protocols and authorizations, e.g. the lab’s Biohazard Use Authorization, MAUP/eProtocol, SDS available at <http://ehs.berkeley.edu/hazardous-materials/safety-data-sheets-formerly-msds>, your lab’s chemical hygiene plan, or contact your supervisor or EH&S at 642-3073 for further guidance.  Useful additional information:  <http://www.stanford.edu/dept/EHS/prod/researchlab/bio/docs/Working_with_Viral_Vectors.pdf>  <http://www.med.unc.edu/genetherapy/vectorcore/files/lentivirus-msds>  <http://www.phac-aspc.gc.ca/msds-ftss/msds84e-eng.php>  *Other required protocols or references:* |

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| **Print Name (last, first)** | **Signature** | **Date Plan Reviewed** |
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PERSONNEL SIGNATURES

EH&S Review (Name/Date):­ 642-3073

OLAC Representative Review (Name/Date): 642-9232