Tufts University / Tufts Medical Center

Exposure Response Plan for Laboratory Handling of Vaccinia Virus (Vv) and Vaccinia Vectors

**Background information:** The Vaccinia virus is the most studied of the poxvirus family. These are the largest known DNA viruses and replicate entirely within the cytoplasm of infected cells. Vaccinia virus as a vector can accept as much as 25 kb of foreign DNA. Foreign genes are integrated stably into the viral genome.

This virus can cause severe infection in immunocompromised persons, persons with certain skin conditions or pregnant women.

NOTE: Several laboratory-acquired infections have been documented. Minimize or eliminate the use of needles, glass and any other sharps when handling this agent.

**Pre-exposure health screening:** All employees who might potentially be exposed to vaccinia virus or vectors based on vaccinia during routine work must be offered vaccinations within 10 days of initial assignment. The staffs of the Employee Health Clinic or Occupational Medical Clinics (Grafton/Medford) will review risks and benefits of vaccination with the exposed individual, review outcome with Principal Investigator and provide clearance to start work.

**Before an exposure incident occurs:**

Immunizations for vaccinia are currently available.

Immunization for vaccinia is available and is offered to all employees within 10 days of beginning work. Employees are required to sign an accept or decline form. If vaccination is declined upon employment or upon beginning work with vaccinia, the employee may change their decision at any time and request immunization at no cost during normal work hours at a reasonable location.

**After an exposure incident occurs: immediate action by route of exposure**

Needlestick, laceration, bite, contact with non-intact skin: There is a high risk of infection. Wash the area with soap and running water. Do not apply bleach, alcohol or other disinfectant to the skin.

Mucous membranes (eye, nose, mouth): There is a moderate risk of infection. If contaminated material is ingested, rinse mouth out with clean water. If contaminated material is splashed or sprayed into the eyes, flush the eyes for 10-15 minutes.
Inhalation: If contaminated materials are aerosolized outside of a biological safety cabinet and the cloud inhaled, rinse mouth twice expelling the rinsate, do not swallow.

Contact with intact skin and clothing: There is a low risk of infection. Remove contaminated clothing using gloves and process as medical waste. Wash skin with soap and water.

Ingestion of viral contaminated materials: No specific treatment available.

Report all exposures to the Principal Investigator and seek medical evaluation.

**After an exposure incident occurs: medical evaluation and follow-up:**

Following immediate actions, contact the TMC Employee Health Clinic (Boston), TCSVM Occupational Medical Clinic (Grafton) or the Mt. Auburn Occupational Health Services (Medford) and arrange for medical diagnosis and treatment.

During this medical evaluation, the employee will be instructed on the signs or symptoms of vaccinia infection and instructed how to identify specific signs and symptoms:

*Within 1 week of exposure, there may be a vesicular or pustular lesion on the skin or on the exposed mucous membrane (mouth, eye or nose)*

If exposed individual develops signs and symptoms of suspect infection, s/he must be evaluated in the Clinic or referred to a Specialist as soon as possible and within 24 hours. Any Vaccinia like infection will be assumed to be laboratory acquired until proved otherwise.

**Post-exposure prophylaxis:**

The decision to implement post exposure prophylaxis will depend on a risk assessment made by the physician based on the risk of infection as compared with the risk of antimicrobial drugs.

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**Tufts Environmental Health and Safety**