Tufts University / Tufts Medical Center

Exposure Response Plan for Laboratory Handling of Ricin

Background information: Ricin is a toxin derived from castor beans. The risk of injury depends upon the route of entry into the body. Ricin inhibits protein synthesis at the ribosome level and some researchers utilize this property. It is listed on the Select Agent and Toxins list. All research procedures using ricin must be registered with the Tufts IBC.

NOTE: To minimize the risk of accidental inhalation, ricin is best obtained in solution. Handling the toxin in dry form creates an airborne hazard and controls must be in place to control airborne contamination and surface contamination, especially during weighing and dose preparation.

RICIN INTOXICATION CAN BE LETHAL.

Pre-exposure health screening: There is no need for pre-exposure screening.

Before an exposure incident occurs:

There is no routinely available vaccine for ricin. An experimental vaccine has had an effective trial in humans. The vaccine was developed at the University of Texas Southwest Medical Branch. Large scale testing is the next step. This vaccine is not licensed and not generally available.

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

Inhalation: May cause severe lung damage. Symptoms include cough and respiratory distress. Rinse mouth twice expelling the rinsate; do not swallow.

Parenteral exposures including needlestick, laceration, bite, and contact with non-intact skin: There is a high risk of toxicity. Wash the area with soap and running water.

Mucous membranes (eye, nose, mouth): There is a moderate risk of intoxication. 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.

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

Report all exposures to the Principal Investigator/lab supervisor and seek immediate medical evaluation. If help is needed with injuries or clean up, members of the University will contact the Police at 6-6911 and members of the Medical Center will
contact Security at 6-5151. Whenever there is an accident involving ricin, the Biosafety Officer must be notified.

**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 evaluation and treatment.

**Post-exposure prophylaxis:**

There is no antidote for ricin toxicity. Treatment will depend on a risk assessment by the physician and is largely supportive medical care.

**Date: November 1, 2010**  
**Tufts Environmental Health and Safety**