**Biohazardous Agent Reference Document (BARD) and**

**Information for Healthcare Providers in the Event of an Exposure**

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| The BARD is an additional guidance tool. It is not a substitute for a risk assessment, biosafety training, lab-specific training, SOP as required by the IBC or a formal [IBC master protocol registration](https://www.uvm.edu/rpo/biosafety-oversight). This document must be readily available in the laboratory, and it is the responsibility of the Laboratory Supervisor or Principal Investigator to ensure that all personnel have read and understood the information. The BARD is not intended to be a substitute for professional medical advice, diagnosis, or treatment. Please bring this IBC-approved BARD with you to the UVMMC Emergency Department if there has been an exposure and someone requires medical assistance.  INSTRUCTIONS for BARD Preparation   1. Complete the blue Information for Healthcare Providers section. 2. Review the standard information contained in the green section of this document. 3. Add/revise information that is specific to your work in the laboratory (such as strain-specific information). Please be sure that the track changes function is turned on to indicate any changes that you make. 4. Submit the BARD along with your IBC master protocol registration or amendment. 5. Once approved by the IBC, all personnel must review this BARD. The PI will attest during the submission of the registration or amendment to add new personnel that each lab member has read and understands the material. | |
| **Information for Healthcare Providers**  Dear Healthcare Provider,  This individual works in a UVM research laboratory and has been exposed to a pathogen or toxin. Information about the materials this person may have been exposed to is listed below. You may also find useful additional information in subsequent pages of this reference document. | |
| **Pathogen Name:** | Entamoeba histolytica |
| **Pathogen/Toxin Classification:** |  |
| **List All Strains Used in the Laboratory:** |  |
| **List Resistant Genes Known to be Encoded:** |  |
| **Modes of Transmission *(mucous membranes, needle stick, inhalation)*:** | Ingestion, sexual transmission |
| **Known Medical Precautions and Treatment** | |

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| **Prophylaxis** | None available |
| **Vaccines** | None available |
| **Treatment and/or Post-exposure Intervention** | Asymptomatic patients can be treated with luminal amebicides only (kills cysts). Symptomatic patients can be treated with tissue amebicides (kills trophozoites), followed by treatment with luminal amebecides. |
| **Surveillance** | Monitor for symptoms and test using serology, PCR, microscopic detection. Sonography or CT scan to confirm tissue invasion. |
| **Additional Medical Precautions (immunosuppression, pregnancy, allergies)** | Pregnant women, immunocompromised, or immunosuppressed individuals may be at an increased risk for complications |

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| **Health Hazards** | |
| **Host Range** | Humans and non-human primates |
| **Signs and Symptoms** | Most infections are asymptomatic.  Amebic dysentery: diarrhea with severe cramping, lower abdominal pain, low-grade fever, presence of blood or mucous in stool. Ulcers may be produced if intestinal tissue invasion occurs. Fever or leukocytosis also possible. |
| **Infectious Dose** | Average >1000 organisms. Ingestion of one cyst reported to cause disease. |
| **Incubation Period** | Range from days to months |
| **Exposure Procedures** | |
| **Mucous membranes** | Flush eyes, mouth or nose for 15 minutes at eyewash station. |
| **Other exposures** | Wash area with soap and water for 15 minutes |
| **Medical Follow-Up** | Contact UVMMC Infectious Disease Dept. directly at **(802) 847-2700** for immediate assistance. Bring this document with you if seeking medical care. |
| **Reporting** | Report all exposures or near misses to:   1. Your immediate Supervisor 2. SOS at 802-656-2560 and ask to have the EH&S team paged 3. Risk Management: <https://www.uvm.edu/riskmanagement/incident-claim-reporting-procedures> |
| **Laboratory Hazards** | |
| **Laboratory Acquired Infections** | LAIs have been reported |
| **Sources** | Feces, ulcer secretions, abscess aspirates, tissue biopsies from infected humans & animals, and laboratory cultures |
| **Characteristics** | |
| **Morphology** | Pseudopod-forming nonflagellate protozoan parasite. Life cycle consists of two stages: ameboid trophozoite (10-60 um) and infectious cyst (10-15 um). |
| **Strain Specific Characteristics** |  |
| **Containment Requirements** | |
| **BSL - 2** | Manipulation of known or potentially infected clinical samples and cell cultures of laboratory adapted strains (RG2) |
| **BSL - 3** |  |
| **ABSL - 2** | Work with animals infected with risk group 2 strains |
| **ABSL - 3** |  |
| **Aerosol generating activities** | Centrifugation, homogenizing, vortexing or stirring, changing of animal cages, animal surgeries, cell sorting, pipetting, pouring liquids, sonicating, loading syringes |
| **Primary containment device (BSC)** | Use for aerosol-generating activities, high concentrations, animal manipulations, or large volumes |
| **Personal Protective Equipment (PPE)** | |
| ***Minimum PPE Requirements*** | Nitrile gloves, lab coat, appropriate eye/face protection |
| ***Additional Precautions***  ***(Risk assessment dependent)*** | Sharps use strictly limited. |
| **Viability** | |
| **Disinfection** | Cysts highly resistant to disinfection. Susceptible to ozone, chlorine dioxide, 8 ppm iodine, free chlorine; with a contact time of 20 minutes. Trophozoites susceptible to 10% bleach, with a contact time of 10 minutes. |
| **Inactivation** | Inactivated by heat above 56°C, solar irradiation, freezing |
| **Survival Outside Host** | Cysts capable of surviving in water and soil for weeks, and in food. Trophozoites are not infectious and do not survive well outside of host. |
| **Spill Clean-Up Procedures** | |
| **Small Spill** | Notify others working in the lab. Allow aerosols to settle. Don appropriate PPE. Cover area of the spill with paper towels and apply approved disinfectant, working from the perimeter towards the center. Allow 30 minutes of contact time before clean up and disposal. Dispose in double biowaste bags and biobox. |
| **Large Spill** | **Inside of a lab:** Call UVM Service Operations at 656-2560 and ask to speak to a dispatcher. Ask them to page Risk Management and Safety.  **Outside of the lab:** Pull the nearest fire alarm and evacuate the building. Wait out front of the building for emergency responders to arrive. |
| **References** | |
| **Canadian PSDS** | <https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/entamoeba-histolytica-pathogen-safety-data-sheet.html> |
| **BMBL** | <https://www.cdc.gov/biosafety/publications/bmbl5/> |
| **CDC Guidelines** | <https://www.cdc.gov/parasites/amebiasis/index.html> |
| **Global Water Pathogen Project** | <http://www.waterpathogens.org/book/entamoeba-histolytica> |