The Biohazardous Agent Reference Document (BARD) is a general guidance resource that reviews and summarizes the nature of a pathogen or biotoxin, and offers safety requirements for work with the agent

in the laboratory. The BARD may replace the formal SOPs used in conjunction with some IBC registrations.

The BARD is provided as an additional guidance tool, and is not a substitute for a risk assessment, biosafety training, lab-specific training, or a formal [IBC master protocol registration](https://www.uvm.edu/rpo/biosafety-oversight). This document should 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, understood, and signed the document. The BARD is for informational purposes only, and is not intended to be a substitute for professional medical advice, diagnosis, or treatment.

Please consult a health care provider for any medical questions or concerns.

**INSTRUCTIONS**

1. **Review the information contained in this document.**
2. **Add any necessary 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.**
3. **Instruct all personnel to review the BARD and sign the last page, indicating that they have**

**read and understood the information.**

1. **Submit the BARD along with your IBC master protocol registration, amendment, or continuing review.**

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| **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*** |  |

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| **health hazards** | |
| ***Host Range*** | Humans and non-human primates |
| ***Modes of Transmission*** | Ingestion, sexual transmission |
| ***Signs and Symptoms*** | Most infections 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 |

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| **Medical precautions / treatment** | |
| ***Prophylaxis*** | None available |
| ***Vaccines*** | None available |
| ***Treatment*** | 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. |
| ***UVM IBC Requirements*** | Report any exposures or signs and symptoms to your supervisor |
| ***Additional Medical Precautions*** | Pregnant women, immunocompromised, or immunosuppressed individuals may be at an increased risk for complications |

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| **laboratory hazards** | |
| ***Laboratory Acquired Infections*** | LAIs have been reported |
| ***Sources*** | Feces, ulcer secretions, abscess aspirates, tissue biopsies from infected humans & animals, and laboratory cultures |

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| **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 |

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| **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. The UVM Biosafety Officer at **(802) 777-9471** and Risk Management at **6-3242** 3. Risk Management and Safety; <https://www.uvm.edu/riskmanagement/incident-claim-reporting-procedures> |

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| **Personal protective equipment (PPE)** | |
| ***Minimum PPE Requirements*** | Nitrile gloves, lab coat, appropriate eye/face protection |
| ***Additional Precautions***  ***(Risk assessment dependent)*** | Sharps use strictly limited. |

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| **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. |

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| **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 press option 1 to speak to a dispatcher. Ask them to page Risk Management and Safety.  **Outside of a lab:** Pull the nearest fire alarm and evacuate the building. Wait out front of the building for emergency responders to arrive. |

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| **Student / Employee Name SIGNATURE DATE** |
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***Biosafety Review:***

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Jeff LaBossiere, Biological Safety Officer

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| **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> |

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