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

**Information for Healthcare Providers in 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:** | Cryptosporidium parvum |
| **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: fecal-oral route, oral contact with contaminated water, food, surfaces, & objects. |
| **Known Medical Precautions and Treatment** | |

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| **Prophylaxis** | None available |
| **Vaccines** | None available |
| **Treatment and/or Post-exposure Intervention** | Nitazoxanide, rehydration and electrolytes in severe cases |
| **Surveillance** | Monitor for symptoms and test stool specimen with serology or direct microscopic observation. Report any exposures or signs and symptoms to your supervisor |
| **Additional Medical Precautions (immunosuppression, pregnancy, allergies)** | Highly contagious. Oocysts can be excreted up to 50 days after symptoms resolve. Immunocompromised individuals are at increased risk. May be life-threatening in AIDS patients and transplant recipients. |

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| **Health Hazards** | |
| **Host Range** | Humans, mammals, fish, amphibians, reptiles, birds. Common in cattle. |
| **Signs and Symptoms** | Acute gastroenteritis. Diarrhea, abdominal pain, cramps, fever, vomiting, muscle pain, nausea, anorexia, malaise, fatigue. Symptoms lasting up to 3 weeks in immunocompetent individuals. In immunocompromised individuals: severe weight loss, cholangitis, pancreatitis, liver cirrhosis. |
| **Infectious Dose** | As few as 1 – 10 oocysts |
| **Incubation Period** | 7 – 10 days |
| **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** | At least 16 cases of lab-acquired cryptosporidiosis have been reported |
| **Sources** | Feces from infected humans and animals, contaminated water, laboratory cultures |
| **Characteristics** | |
| **Morphology** | Intracellular protozoan parasite with thick-walled spherical oocysts 4 -6 micrometer in size |
| **Strain Specific Characteristics** |  |
| **Containment Requirements** | |
| **BSL - 2** | Manipulation of known or potentially infected clinical samples and 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 procedures that may produce aerosols, or involve high concentrations or large volumes |
| **Personal Protective Equipment (PPE)** | |
| ***Minimum PPE Requirements*** | Nitrile gloves, waterproof shoe covers for animal work, lab coat or gown, appropriate eye/face protection. Wash hands after removing gloves. |
| ***Additional Precautions***  ***(Risk assessment dependent)*** | Risk Assessment Dependent |
| **Viability** | |
| **Disinfection** | Susceptible to >6% hydrogen peroxide and ethylene oxide, with a 20-minute contact time |
| **Inactivation** | Inactivated by autoclaving, or freezing at -80°C |
| **Survival Outside Host** | Oocysts can survive for 6 months at 20°C in the environment |
| **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 a lab:** Pull the nearest fire alarm and evacuate the building. Wait out front of the building for emergency responders to arrive. |
| **References** | |
| **Canadian PDSD** | <https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/cryptosporidium-parvum-pathogen-safety-data-sheet.html> |
| **BMBL** | <https://www.cdc.gov/biosafety/publications/bmbl5/> |
| **CDC Guidelines** | <https://www.cdc.gov/parasites/crypto/index.html> |