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*** | Filamentous fungi, consists of a smooth and colorless conidiophores and spores. |
| ***Strain Specific***  ***Characteristics*** | Aspergillus spp., including A. fumigatus and A. flavus, are ubiquitous worldwide in the environment including in soil, decomposing organic matter, household dust, building materials, plants, food and water. |

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| **health hazards** | |
| ***Host Range*** | Mammals including: humans, cows, dolphins, birds, horses, others; plants including: corn, peanuts, tree nuts, others. |
| ***Modes of Transmission*** | Aerosol inhalation |
| ***Signs and Symptoms*** | Respiratory symptoms such as coughing, sneezing, sinusitis, headache, fever, or chest pain |
| ***Infectious Dose*** | Unknown |
| ***Incubation Period*** | May vary from 2 days to 3 months |

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| **Medical precautions / treatment** | |
| ***Prophylaxis*** | Antifungals may be prescribed for high risk individuals (organ or stem cell transplant recipients) |
| ***Vaccines*** | None available |
| ***Treatment*** | Invasive aspergillosis needs to be treated with prescription antifungal medication, usually voriconazole. |
| ***Surveillance*** | Monitor for symptoms and test using serology, PCR, or microbiological isolation |
| ***UVM IBC Requirements*** | Report any exposures or signs and symptoms to your supervisor |
| ***Additional Medical Precautions*** | A. fumigatus and A. flavus are both etiologic agents known for causing the human disease aspergillosis. A. fumigatus is the leading agent causing aspergillosis, with about 70% of cases; it can be abundant in soils and presumably in dust blowing off of agricultural fields. |

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| **laboratory hazards** | |
| ***Laboratory Acquired Infections*** | No data |
| ***Sources*** | Sputum, biopsy material, tracheal aspirates, or blood of infected animals or humans. Soil, infected plants, or laboratory cultures. |

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| **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 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 |
| ***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. Wash hands after removing gloves. |
| ***Additional Precautions*** | Limit sharps use. |

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| **Viability** | |
| ***Disinfection*** | 1:10 bleach dilution with 10-minute contact time |
| ***Inactivation*** | Inactivated by autoclaving, or by microwave irradiation at 800 watts for 90 seconds – 2 minutes. Heating to 60°C for 45 minutes does not completely inactive *A. fumigatus*. |
| ***Survival Outside Host*** | Conidia are generally heat-resistant; can survive in soil and decomposing vegetation. |

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| **References** | |
| Canadian PSDS | <https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/aspergillus.html> |
| BMBL | <https://www.cdc.gov/biosafety/publications/bmbl5/> |
| CDC Guidelines | <https://www.cdc.gov/fungal/diseases/aspergillosis/index.htm> |
| Infectious Disease Society of America | <http://www.uphs.upenn.edu/bugdrug/antibiotic_manual/aspergillosis%20IDSA%20practice%20guidelines%202016.pdf> |

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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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