The University of Vermont
Risk Management & Safety
Biosafety Office

BIOHAZARDOUS AGENT REFERENCE DOCUMENT

Aspergillus fumigatus

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

Principal Investigator: _____ IBC Registration#: _____

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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.

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

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.

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.

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

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

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.

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.

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

STUDENT / EMPLOYEE NAME	SIGNATURE	DATE

Biosafety Review:

_____ _____

Jeff LaBossiere, Biological Safety Officer — Date

Principal Investigator: _____ IBC Registration#: _____