

BIOHAZARDOUS AGENT REFERENCE DOCUMENT**Klebsiella pneumoniae**

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.**

BIOHAZARDOUS AGENT REFERENCE DOCUMENT

Klebsiella pneumoniae

CHARACTERISTICS

Morphology	Gram-negative, non-motile, encapsulated, rod-shaped bacterium, belonging to the family Enterobacteriaceae.
Strain Specific Characteristics	Clinical isolates, lab strains, and animal-adapted strains.

HEALTH HAZARDS

Host Range	Humans, animals (horses, cattle)
Modes of Transmission	Ingestion, mucosal contact with contaminated surfaces or objects, parenteral inoculation
Signs and Symptoms	Fever, chills, nausea, vomiting, diarrhea or abdominal pain, leukocytosis with red jelly-like sputum. May cause pneumonia, lung or liver abscess, urinary tract infection, septicemia
Infectious Dose	Unknown
Incubation Period	Unknown

MEDICAL PRECAUTIONS / TREATMENT

Prophylaxis	None available
Vaccines	None available
Treatment	Appropriate antibiotics (Known to show resistance to penicillins)
Surveillance	Monitor for symptoms and test using serology
UVM IBC Requirements	Report any exposures or signs and symptoms to your supervisor.
Additional Medical Precautions	Opportunistic pathogen. A leading cause of nosocomial infections. Immunocompromised individuals and neonates are at the highest risk

LABORATORY HAZARDS

Laboratory Acquired Infections	1 case of lab-acquired infection with K. pneumoniae has been documented.
Sources	Respiratory specimens, sputum, blood, urine, abscesses, feces from infected humans and animals, and 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 procedures that may generate aerosols, high concentrations, 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 UVMHC Infectious Disease Dept. directly at (802) 847-2700 for immediate assistance
Reporting	Report all exposures or near misses to: <ol style="list-style-type: none"> Your immediate Supervisor The UVM Biosafety Officer at (802) 777-9471 and Risk Management at 6-3242 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 (Risk assessment dependent)	Sharps use strictly limited.

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VIABILITY	
Disinfection	Susceptible to 1% sodium hypochlorite, phenolic compounds, iodines, 2% glutaraldehyde, 70% ethanol, and formaldehyde; with a 10-minute contact time
Inactivation	Inactivated by autoclaving
Survival Outside Host	Can survive for extended periods of time in water, sewage, soil, wood, sawdust, and on plants

REFERENCES	
Canadian PSDS	https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/klebsiella.html
BMBL	https://www.cdc.gov/biosafety/publications/bmb15/
CDC Guidelines	https://www.cdc.gov/HAI/organisms/klebsiella/klebsiella.html

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.

STUDENT / EMPLOYEE NAME	SIGNATURE	DATE

Biosafety Review:

Jeff LaBossiere, Biological Safety Officer

Date

Principal Investigator: _____

IBC Registration #: _____