

BIOHAZARDOUS AGENT REFERENCE DOCUMENT

Zika virus (ZIKV)

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.**

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CHARACTERISTICS

Morphology	Member of the Flaviviridae family, enveloped virus.
Strain Specific Characteristics	

HEALTH HAZARDS

Host Range	Humans and non-human primates
Modes of Transmission	Blood borne, bite from infected <i>Aedes</i> mosquito, perinatal, in utero, sexual contact, contact with non-intact skin or mucous membranes
Signs and Symptoms	Mostly asymptomatic, but may present with: fever, rash, muscle and/or joint pain, conjunctivitis, headache
Infectious Dose	Unknown
Incubation Period	3 – 12 days

MEDICAL PRECAUTIONS / TREATMENT

Prophylaxis	None available
Vaccines	None available
Treatment	Symptomatic: fever reduction, anti-histamines, pain relief
Surveillance	Monitor for symptoms and test using serology, RT-PCR, or nucleic acid testing from blood or urine sample
UVM IBC Requirements	Report any exposures or signs and symptoms to your supervisor
Additional Medical Precautions	Women who are pregnant or planning on becoming pregnant should be aware that pregnant women infected with Zika can transmit the virus to their fetus, which can result in severe birth defects. Avoid contact with mosquitoes to prevent spreading the virus.

LABORATORY HAZARDS

Laboratory Acquired Infections	Accidental infection has occurred in laboratory personnel
Sources	Infected mosquitos, human or animal blood, body fluids, or tissues, laboratory cultures.

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, large volumes, or high concentrations

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 UVMDC 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: <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, closed toed shoes, lab coat, appropriate eye/face protection
Additional Precautions (Risk assessment dependent)	Sharps use strictly limited.

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VIABILITY	
Disinfection	Susceptible to: 10% bleach, 2% glutaraldehyde, 2% paraformaldehyde, or 70% ethanol with a 10 minute contact time
Inactivation	Inactivated by heat >60°C, and pH of <4 or >11
Survival	Unknown
Outside Host	

REFERENCES	
Emerging Infectious Disease	https://wwwnc.cdc.gov/eid/article/22/9/16-0664_article
BMBL	https://www.cdc.gov/biosafety/publications/bmb15/
CDC Guidelines	https://www.cdc.gov/zika/laboratories/index.html
OSHA Fact Sheet	https://www.osha.gov/Publications/OSHA3917.pdf

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	<p>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.</p> <p>Outside of a lab: Pull the nearest fire alarm and evacuate the building. Wait out front of the building for emergency responders to arrive.</p>

STUDENT / EMPLOYEE NAME	SIGNATURE	DATE

Biosafety Review:

Jeff LaBossiere, Biological Safety Officer

Date