

Biological Agent Reference Sheet (BARS)

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BIOLOGICAL AGENT REFERENCE SHEET

Chikungunya Virus (CHIKV)

CHARACTERISTICS	
<i>Morphology</i>	Spherical enveloped virion that measures 60 to 70 nm in diameter and contains a single-stranded, positive-sense RNA genome.
<i>Growth Conditions</i>	Cell culture.

HEALTH HAZARDS	
<i>Host Range</i>	Humans, non-human primates, rodents, and birds.
<i>Modes of Transmission</i>	<i>Aedes</i> mosquito bites (mostly bite during the daytime). In rare cases, CHIKV can be transmitted from mother to newborn at time of birth. Inhalation of aerosolized CHIKV in the lab may lead to infection.
<i>Signs and Symptoms</i>	Most common: Fever and joint pain; other symptoms may include: headache, muscle pain, joint swelling, or rash. Does not often result in death, but can be severe and disabling.
<i>Infectious Dose</i>	Unknown.
<i>Incubation Period</i>	Usually 2-3 days (1-10 day range)

MEDICAL PRECAUTIONS / TREATMENT	
<i>Prophylaxis</i>	Avoid mosquito bites. Use insect repellent (containing DEET, picaridin, IR3535, and oil of lemon eucalyptus and paramenthane-diol products) when travelling to countries with CHIKV. Wear long sleeves and pants. Stay in places with air conditioning or that use window and door screens.
<i>Vaccines</i>	None available.
<i>Treatment</i>	No specific treatment available. To decrease the symptoms get plenty of rest, drink fluids to prevent dehydration, and take medicines such as ibuprofen, naproxen, acetaminophen to relieve fever and pain.
<i>Surveillance</i>	Monitor for symptoms. Confirmation is via detection of CHIKV in blood samples.
<i>Emory Requirements</i>	Report all exposures.

LABORATORY HAZARDS	
<i>Laboratory Acquired Infections (LAIs)</i>	Forty-one cases were reported up until 1980. Two more cases were reported in 1981.
<i>Sources</i>	Blood. Inhalation of aerosolized CHIKV in the lab.

SUPPLEMENTAL REFERENCES	
<i>Canadian MSDS</i>	http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/chikungunya-eng.php
<i>BMBL: 5th Edition</i>	http://www.cdc.gov/OD/ohs/biosfty/bmb15/BMBL_5th_Edition.pdf
<i>CDC Guidelines</i>	http://www.cdc.gov/chikungunya/index.html

CONTAINMENT REQUIREMENTS	
<i>BSL-3</i>	All work involving infectious or potentially infectious material.
<i>ABSL-3</i>	All work involving infectious or potentially infectious material.

SPILL PROCEDURES	
<i>Small</i>	Notify others working in the lab. Allow aerosols to settle. Don appropriate PPE. Cover area of the spill with paper towels and apply an EPA registered disinfectant, working from the perimeter towards the center. Allow 30 minutes of contact time before disposal and cleanup of spill materials.
<i>Large</i>	Contact Emory's Biosafety Officer (404-727-8863), the EHSO Office (404-727-5922), or The Spill Response Team (404-727-2888).

EXPOSURE PROCEDURES					
<i>Mucous membrane</i>	Flush eyes, mouth or nose for 15 minutes at eyewash station.				
<i>Other Exposures</i>	Wash area with soap and water for 15 minutes.				
<i>Reporting</i>	Immediately report incident to supervisor, complete an employee incident report in PeopleSoft.				
<i>Medical Follow-up</i>	<table border="0"> <tr> <td><i>7am-4pm (OIM):</i> EUH (404-686-7941) EUHM (404-686-7106) WW (404-728-6431)</td> <td><i>After Hours:</i> OIM NP On Call 404-686-5500 PIC# 50464</td> </tr> <tr> <td><i>Needle Stick (OIM):</i> EUH (404-686-8587) EUHM (404-686-2352)</td> <td><i>Yerkes:</i> Maureen Thompson Office (404-727-8012) Cell (404-275-0963)</td> </tr> </table>	<i>7am-4pm (OIM):</i> EUH (404-686-7941) EUHM (404-686-7106) WW (404-728-6431)	<i>After Hours:</i> OIM NP On Call 404-686-5500 PIC# 50464	<i>Needle Stick (OIM):</i> EUH (404-686-8587) EUHM (404-686-2352)	<i>Yerkes:</i> Maureen Thompson Office (404-727-8012) Cell (404-275-0963)
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VIABILITY	
<i>Disinfection</i>	Susceptible to 70% Ethanol, 10% bleach, and 2% glutaraldehyde.
<i>Inactivation</i>	Sensitive to temperatures above 58°C.
<i>Survival Outside Host</i>	Unknown.

PERSONAL PROTECTIVE EQUIPMENT (PPE)	
<i>Minimum PPE Requirements</i>	At minimum, personnel are required to don gloves, closed toed shoes, lab coat, and appropriate face and eye protection prior to working with CHIKV. Additional PPE may be required depending on lab specific SOPs.
<i>Additional Precautions</i>	All procedures that may produce aerosols, or involve high concentrations or large volumes should be conducted in a biological safety cabinet (BSC). The use of needles, syringes, and other sharp objects should be strictly limited. Additional precautions should be considered with work involving animals or large scale activities.