

## **Biological Agent Reference Sheet (BARS)**

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**BIOLOGICAL AGENT REFERENCE SHEET**
**Zika Virus (ZIKV)**

CHARACTERISTICS	
<i>Morphology</i>	Zika virus (ZIKV) is a single-stranded RNA virus of the Flaviviridae family, genus Flavivirus, Spondweni group. There are two ZIKV lineages: the African lineage and the Asian lineage which has recently emerged in the Pacific and the Americas.
<i>Growth Conditions</i>	Inoculate intracerebrally into suckling mice. Resuspend 20% sMb (sucking mouse brain) with 7.5% BSA in PBS.
<i>Sources</i>	-ATCC® VR84 – from MR766 (original strain) -Wild virus isolated from infected human diagnostic samples

HEALTH HAZARDS	
<i>Host Range</i>	Humans and NHPs, non-pathogenic for hamster, guinea pig or rabbit.
<i>Modes of Transmission</i>	ZIKV is transmitted by infected <i>Aedes</i> mosquitoes. Perinatal, in utero, sexual and transfusion transmission events have also been reported.
<i>Signs and Symptoms</i>	About 1 in 5 people infected with ZIKV become ill. The most common symptoms of Zika are fever, rash, joint pain, or conjunctivitis (red eyes). Other common symptoms include muscle pain and headache. The illness is usually mild with symptoms lasting for several days to a week. There may be an association between ZIKV infection in pregnancy and microcephaly of the fetus.
<i>Infectious Dose</i>	Unknown
<i>Incubation Period</i>	The incubation period ranges between approximately three to 12 days after the bite of an infected mosquito. Most of the infections remain asymptomatic (between 60 to 80%).

MEDICAL PRECAUTIONS / TREATMENT	
<i>Prophylaxis</i>	None
<i>Vaccines</i>	None
<i>Diagnosis</i>	ZIKV disease diagnostics is primarily based on detection of viral RNA from clinical specimens in acutely ill patients. The viremic period appears to be short, allowing for direct virus detection during the first 3–5 days after the onset of symptoms.
<i>Treatment</i>	The treatment is symptomatic and mainly based on pain relief, fever reduction and anti-histamines for pruritic rash.
<i>Surveillance</i>	People infected with ZIKV, chikungunya, or dengue virus should be protected from further mosquito exposure during the first few days of illness to prevent other mosquitoes from becoming infected and reduce the risk of local transmission
<i>Emory Requirements</i>	Occupational Health Consultation prior to handling ZIKV. Report all incidents.

LABORATORY HAZARDS	
<i>Laboratory Acquired Infections (LAIs)</i>	Accidental infection has occurred in laboratory personnel
<i>Sources</i>	Unknown

SUPPLEMENTAL REFERENCES	
<i>European CDC</i>	<a href="http://ecdc.europa.eu/en/healthtopics/zika_virus_inf">http://ecdc.europa.eu/en/healthtopics/zika_virus_inf</a>

	<a href="#">ection/factsheet-health-professionals/Pages/factsheet_health_professionals.aspx#sthash.Xj8UPvQH.dpuf</a>
<i>CDC</i>	<a href="http://www.cdc.gov/zika/prevention/index.html">http://www.cdc.gov/zika/prevention/index.html</a> <a href="http://www.cdc.gov/biosafety/publications/bmb15/bmb15_sect_viii_f.pdf">http://www.cdc.gov/biosafety/publications/bmb15/bmb15_sect_viii_f.pdf</a>
<i>ATCC</i>	<a href="http://www.atcc.org/products/all/VR-84.aspx#documentation">http://www.atcc.org/products/all/VR-84.aspx#documentation</a>

CONTAINMENT	
<i>BSL2+/ABSL2+</i>	Appropriate safety procedures should always be used with this material. See BMBL Section VIII.F. Biosafety containment requirements: BSL2+/ABSL2+ means BSL2 containment with BSL3 practices and or PPE. Lab specific procedures (SOPs) will outline specific containment and practices and PPE.

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 approved 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>	<b>7am-4pm (OIM):</b> EUH (404-686-7941) EUHM (404-686-7106) WW (404-728-6431)	<b>After Hours:</b> OIM NP On Call 404-686-5500 PIC# 50464
	<b>Needle Stick (OIM):</b> EUH (404-686-8587) EUHM (404-686-2352)	<b>Yerkes:</b> Maureen Thompson Office (404-727-8012) Cell (404-275-0963)

VIABILITY	
<i>Disinfection</i>	Unknown. Other flaviviruses are susceptible to 70% ethanol, 10% bleach, and 2% glutaraldehyde
<i>Inactivation</i>	Inactivated by heat and low pH.
<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 when working with ZIKV. Additional PPE may be required depending on lab specific SOPs and containment.
<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.