

Biological Agent Reference Sheet (BARS)

This content of this document is for Emory University USE ONLY.

The information and contents of this Biological Agent Reference Sheet (including all text and graphics), whether available in print or electronic format (including any digital format, e-mail transmissions, or download from the website), shall be known hereinafter as "Reference Sheet Content". The Reference Sheet Content is provided as a courtesy and is not intended as a sole source of guidance in the evaluation of Biological Agents. The Reference Sheet Content is not intended to substitute for medical advice, medical care, diagnosis or treatment obtained from a physician or health care provider. Please seek the advice of a physician or other qualified health provider with any questions you may have regarding a medical condition. Do not rely on the Reference Sheet Content for diagnosis, treatment, or medical advice. This Reference Sheet Content is for informational purposes and does not provide individualized medical care or treatment. No endorsement of any specific tests, products, or procedures is made by Reference Sheet Content or affiliated party, member, agent or employee of the Emory University Environmental Health and Safety Office.

BIOLOGICAL AGENT REFERENCE SHEET

Listeria monocytogenes

CHARACTERISTICS	
<i>Morphology</i>	Gram positive, aerobic, mobile, intracellular coccobacilli that may form chains.
<i>Growth Conditions</i>	Growth at 4°C.

HEALTH HAZARDS	
<i>Host Range</i>	Mammals, fish, birds, crustaceans, and insects. Pregnant women, the elderly, immunocompromised, fetuses, and neonates are the most at risk for listeriosis.
<i>Modes of Transmission</i>	Ingestion of contaminated food, direct contact with contaminated soil, and transmission from the mother to fetus during birth. Infected mothers may shed for 7-10 days after delivery.
<i>Signs and Symptoms</i>	Symptoms of listeriosis include fever, muscle ache, nausea, and diarrhea may occur. Infection may spread to the nervous system causing meningitis. Endocarditis (inflammation of the heart's inner lining), septicemia, and disseminated granulomatous may occur in infected adults. Pregnant women may experience only a mild, flu-like illness. However, infections during pregnancy can lead to abortion, stillbirth, premature delivery, or infection of the newborn.
<i>Infectious Dose</i>	Unknown.
<i>Incubation Period</i>	From 3-70 days. Median incubation period is 21 days.

MEDICAL PRECAUTIONS / TREATMENT	
<i>Prophylaxis</i>	None available.
<i>Vaccines</i>	None available.
<i>Treatment</i>	Antibiotic therapy (penicillin or ampicillin alone or with aminoglycosides). Resistant to cephalosporin.
<i>Surveillance</i>	Monitor for symptoms. Test feces, CFS, or blood.
<i>Emory Requirements</i>	Report any exposures.

LABORATORY HAZARDS	
<i>Laboratory Acquired Infections (LAIs)</i>	There have only been 2 reported LAIs. Pregnant women should take special caution to avoid contact with infected material.
<i>Sources</i>	Cerebrospinal fluid, blood, placental/fetal tissue, genital track secretions, amniotic fluid, and infected animals.

SUPPLEMENTAL REFERENCES	
<i>Canadian MSDS</i>	http://www.phac-aspc.gc.ca/msds-ftss/msds96e-eng.php
<i>BMBL: 5th Edition</i>	http://www.cdc.gov/OD/ohs/biosfty/bmb15/BMBL_5th_Edition.pdf
<i>CDC</i>	https://www.cdc.gov/listeria/

CONTAINMENT REQUIREMENTS	
<i>BSL-2</i>	For all procedures involving clinical samples or bacterial culture.
<i>ABSL-2</i>	For all procedures involving animals infected with <i>L. monocytogenes</i> .

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>	<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)

VIABILITY	
<i>Disinfection</i>	Susceptible to 1% sodium hypochlorite, 70% ethanol, and glutaraldehyde
<i>Inactivation</i>	Inactivated by moist heat (15 minutes at 121°C), dry heat (1 hour at 160-170°C), and short wave UV and gamma irradiation.
<i>Survival Outside Host</i>	Able to survive outside of hosts (water, soil, food, feces). Capable of growing at low temperatures(-4 to -0.1°C)

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 <i>L. monocytogenes</i> . Additional PPE may be required depending on lab specific SOPs.
<i>Additional Precautions</i>	None required