

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

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## BIOLOGICAL AGENT REFERENCE SHEET

### *Salmonella typhimurium*

CHARACTERISTICS	
<i>Morphology</i>	Family <i>Enterobacteriaceae</i> ; <i>S. typhimurium</i> is a gram negative rod; motile, aerobic and anaerobic. This bacteria is one of the non-typhoid strains of salmonella common in the US
<i>Growth Conditions</i>	LB broth/agar (37°C); Aerobic

HEALTH HAZARDS	
<i>Host Range</i>	Humans, patients with acute illness and chronic carriers, flies possibly as a vector
<i>Modes of Transmission</i>	Skin exposure; mucous membrane splash; ingestion
<i>Signs and Symptoms</i>	Acute infectious disease with sudden onset of abdominal pain, diarrhea, nausea and vomiting.
<i>Infectious Dose</i>	Unknown
<i>Incubation Period</i>	Usually 6 to 72 hours for gastroenteritis and 5-21 days for enteric fever.

MEDICAL PRECAUTIONS / TREATMENT	
<i>Prophylaxis</i>	None available
<i>Vaccines</i>	None available for non-typhoid <i>Salmonella</i> species
<i>Treatment</i>	Antibiotic treatment is specific to symptomatology.
<i>Surveillance</i>	Monitor for symptoms; bacteriological examination of blood, excreta
<i>Emory Requirements</i>	Report all incidents. Contact the Biosafety Officer to discuss the need for a CDC and/or USDA permit.

LABORATORY HAZARDS	
<i>Laboratory Acquired Infections (LAIS)</i>	Laboratory infections have been reported with <i>Salmonella</i> spp.
<i>Sources</i>	Contaminated food, blood, abscesses, lesion exudates, CSF, feces, and urine

SUPPLEMENTAL REFERENCES	
<i>CDC</i>	<a href="http://www.cdc.gov/salmonella/index.html">http://www.cdc.gov/salmonella/index.html</a> <a href="https://www.cdc.gov/biosafety/publications/bmbl5/">https://www.cdc.gov/biosafety/publications/bmbl5/</a>
<i>USDA</i>	<a href="https://fsrio.nal.usda.gov/research/publications/bacterial-pathogens/salmonella">https://fsrio.nal.usda.gov/research/publications/bacterial-pathogens/salmonella</a>
<i>NIH</i>	<a href="https://www.nlm.nih.gov/medlineplus/salmonellainfections.html">https://www.nlm.nih.gov/medlineplus/salmonellainfections.html</a>
<i>FDA</i>	<a href="http://www.fda.gov/food/guidanceregulation/guidancedocumentsregulatoryinformation/salmonella/default.htm">http://www.fda.gov/food/guidanceregulation/guidancedocumentsregulatoryinformation/salmonella/default.htm</a>

CONTAINMENT	
<i>BSL-2</i>	All work with <i>Salmonella</i> -infected samples or propagation of the bacteria must be conducted inside a Biological Safety Cabinet (BSC) Class II. Use face shield, surgical mask and eye protection for open bench work. Hand washing procedures must be carefully followed. Animal work should be conducted in the BSC. Risk assessment will be needed for procedures generating aerosols.

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>	For assistance, contact Emory's Biosafety Officer (404-727-8863), or the EHSO Spill Team (404-727-2888)

EXPOSURE PROCEDURES		
<i>Mucous membrane</i>	Exposure should be irrigated vigorously	
<i>Skin Exposure (Needlestick or scratch):</i>	Immediately go to the sink and thoroughly wash the wound with soap and water for 15 minutes. Decontaminate any exposed skin surfaces with an antiseptic scrub solution	
<i>Splash Affecting Garments:</i>	Remove garments that may have become soiled or contaminated and place them in a double red plastic bag	
<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>	1% sodium hypochlorite, 70% ethanol
<i>Inactivation</i>	Sensitive to heat, UV light, Blue light-emitting diodes (LEDs)
<i>Survival Outside Host</i>	Survival ranges from hours to months

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>Salmonella typhimurium</i> . 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 after consultation with the Biosafety Officer. 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.