

PATHOGEN SAFETY DATA SHEET

Helicobacter pylori

CHARACTERISTICS	
Morphology	Gram negative microaerophilic curved rod.
Disease	H. pylori are not invasive, but colonize in the human stomach's antral region and gastric mucosal surfaces where they release pathogenic proteins that induce cell injury and inflammation. This can result in clinical symptoms of infection, such as duodenal ulcer and gastric adenocarcinoma. Other common illnesses as a result of infection include gastroenteritis, diffuse antral gastritis, and gastric carcinoma. H. pylori is a Class I human carcinogen according to the World Health Organization. Infection can last a lifetime in the host if not properly treated, causing chronic gastritis which can lead to peptic gastroduodenal ulcer disease.
Zoonosis	Yes, animals and humans and vice versa.

HEALTH HAZARDS	
Host Range	Humans and animals
Modes of Transmission	With more than 50 % of the world's population infected, acquisition is likely to occur during childhood through fecal-oral, oral-oral contact, or during gastrointestinal tract transit disorders.
Signs and Symptoms	Gastroenteritis and ulcers. Major symptoms are abdominal pain, heartburn, and nausea.
Infectious Dose	unknown
Incubation Period	unknown.

MEDICAL PRECAUTIONS/TREATMENT	
Prophylaxis	None available.
Vaccines	None available.
Treatment	Clarithromycin, amoxicillin, and tetracycline.
Surveillance	Can be confirmed by culture, blood antigen detection, and urease detection
MSU Requirements	Report any exposures

LABORATORY HAZARDS	
Laboratory Acquired Infections (LAIs)	3 reported cases.
Sources	May be located in the oral cavity, gastrointestinal and hepatobiliary regions. Cultures, frozen stocks, other samples described in IBC protocol.

SUPPLEMENTAL REFERENCES	
Canadian MSDS:	http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/index-eng.php
BMBL	https://www.cdc.gov/labs/BMBL.html
CDC	https://stacks.cdc.gov/view/cdc/40603
NIH Guidelines	https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf

RISK GROUP & CONTAINMENT REQUIREMENTS	
Risk Group 2	Agents that are associated with human disease which is rarely serious and for which preventive or therapeutic interventions are often available.
BSL2	For all procedures involving suspected or known infectious specimen or cultures.
ABSL2	For all procedures utilizing infected animals.

SPILL PROCEDURES	
Small	Notify others working in the lab. Remove PPE and don new PPE. Cover area of the spill with absorbent material and add fresh 1:10 bleach:water. Allow 20 minutes (or as directed) of contact time. After 20 minutes, cleanup and dispose of materials.
Large	<ul style="list-style-type: none"> Immediately notify all personnel in the lab and clear all personnel from the area. Remove any contaminated PPE/clothing and leave the lab. Secure the area by locking doors, posting signage and guarding the area to keep people out of the space. For assistance, contact MSU's Biosafety Officer (406-994-6733) or Safety and Risk Management (406-994-2711).

EXPOSURE PROCEDURES	
Mucous membrane	Flush eyes, mouth, or nose for 5 minutes at eyewash station.
Other Exposures	Wash area with soap and water for 5 minutes.
Reporting	Immediately report incident to supervisor, complete a First Report of Injury form, and submit to Safety and Risk Management.
Medical Follow-up	During business hours: Bridger Occupational Health 3406 Laramie Drive Weekdays 8am -6pm. Weekends 9am-5pm After business hours: Bozeman Deaconess Hospital Emergency Room 915 Highland Blvd

VIABILITY	
Disinfection	Susceptible to 1:10 bleach:water, 70 % ethanol
Inactivation	Inactivated by moist heat (15 minutes at 121°C) and dry heat (10 minutes at 70°C followed by 5 minutes at 95°C).
Survival Outside Host	unknown

PERSONAL PROTECTIVE EQUIPMENT (PPE)	
Minimum PPE Requirements	Lab coat, disposable gloves, safety glasses, closed toed shoes, long pants
Additional Precautions	Additional PPE may be required depending on lab specific SOPs and IBC Protocol.