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| **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. |

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| **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. |

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| **MEDICAL PRECAUTIONS/TREATMENT** | |
| Prophylaxis | None. |
| Vaccines | None. |
| Treatment | Clarithromycin, amoxicillin, and tetracycline. |
| Surveillance | Monitor for symptoms. |
| MSU Requirements | Report any exposures. |

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| **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. |

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| **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. |

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

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| **SUPPLEMENTAL REFERENCES** | |
| BMBL | <https://www.cdc.gov/labs/BMBL.html> |
| NIH Guidelines | <https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf> |
| CDC | <https://stacks.cdc.gov/view/cdc/40603> |
| Canada PSDS | <https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/helicobacter-pylori.html> |

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| **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 | * 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). |

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| **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](https://firstreportinjury.mus.edu/) form, and submit to Safety and Risk Management. |
| Medical Follow-up | **During business hours:**  Bridger Occupational Health 3400 Laramie Drive Weekdays 8am -6pm. Weekends 9am-5pm  406-577-7674  **After business hours:**  Bozeman Deaconess Hospital Emergency Room  915 Highland Blvd |

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| **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. |