|  |  |
| --- | --- |
| **CHARACTERISTICS** | |
| Morphology | Gram negative cocci or small rods, aerobic, non-motile. |
| Disease | *Brucella abortus* and *Brucella melitensis* cause brucellosis. Brucellosis can spread from person to person, and in a few cases, women have passed the disease to their children during birth or through their breast milk. Chronic brucellosis may cause complications in just one organ or throughout your body. |
| Zoonosis | Yes. |

|  |  |
| --- | --- |
| **HEALTH HAZARDS** | |
| Host Range | Humans and many different wild and domestic animals. |
| Modes of Transmission | Transmitted in milk, urine and feces but most importantly, amniotic fluids and placenta. Aerosol transmission of concern. Consumption of milk that is not pasteurized. |
| Signs and Symptoms | Symptoms of brucelloisis may include intermittent fever, headache, sweats, malaise, anorexia, pain in muschles, joint and/or back and fatique. Symptoms may disappear for weeks or months and then return, and can be chronic even after treatment. |
| Infectious Dose | 10-100 organisms. |
| Incubation Period | Highly variable; 2-4 weeks; Occasionally several months. |

|  |  |
| --- | --- |
| **MEDICAL PRECAUTIONS/TREATMENT** | |
| Prophylaxis | None. |
| Vaccines | Vaccines not available for use in humans. |
| Treatment | Intramuscular injections of streptomycin and oral doxycycline twice daily for 45 days is the gold standard treatment. |
| Surveillance | Monitor for symptoms; isolation of organism; serological testing. |
| MSU Requirements | Report any exposures. |

|  |  |
| --- | --- |
| **LABORATORY HAZARDS** | |
| Laboratory Acquired Infections (LAIs) | Most commonly reported laboratory-acquired infection; 423 cases up to 1976 with 5 deaths. |
| Sources | Cultures, blood, tissues, placentas, fetuses, urine, uterine discharges. |

|  |  |
| --- | --- |
| **RISK GROUP & CONTAINMENT REQUIREMENTS** | |
| Risk Group 3 | Agents are associated with serious or lethal human disease for which preventive or therapeutic interventions may be available. |
| BSL3 | For all procedures involving suspected or known infectious specimen or cultures. |
| ABSL3 | For all procedures utilizing infected animals infected with *Brucella spp*. |

|  |  |
| --- | --- |
| **VIABILITY** | |
| Disinfection | Susceptible to many disinfectants – 1 % sodium hypochlorite, 70 % ethanol, iodine/alcohol solutions, glutaraldehyde, formaldehyde. |
| Inactivation | Inactivated by moist heat (1 hour at 121oC) and dry heat (1 hour at 160-170oC). |
| Survival Outside Host | Carcasses and organs – up to 135 days; paper – 32 days; soil – 125 days; blood 4oC – 180 days. |

|  |  |
| --- | --- |
| **SUPPLEMENTAL REFERENCES** | |
| BMBL | <https://www.cdc.gov/labs/BMBL.html> |
| CDC | http://www.cdc.gov/brucellosis/ |
| NIH Guidelines | <https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf> |
| Canada PSDS | <http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/index-eng.php> |

|  |  |
| --- | --- |
| **SPILL PROCEDURES** | |
| Small | Notify others working in the lab. Remove and don new PPE. Cover area of the spill with absorbent material and add 5 % Micro-Chem. Allow 30 minutes of contact time. After 30 minutes and then 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). |

|  |  |
| --- | --- |
| **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 |

|  |  |
| --- | --- |
| **PERSONAL PROTECTIVE EQUIPMENT (PPE)** | |
| Minimum PPE Requirements | Socks, scrubs and shoes; coveralls with attached booties; 2 sets of nitriles gloves; outer booties; and PAPR prior to working with Brucella spp. |
| Additional Precautions | Follow all JRL SOPs, policies, and procedures. |