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| **CHARACTERISTICS** |
| Morphology | Free-living amoeba. |
| Disease | Keratitis and granulomatous amoebic encephalitis. |
| Zoonosis | None. |

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| **HEALTH HAZARDS** |
| Host Range | Water, air-conditioning units, sewage, compost, sediments, soil, vegetables, air, and contact lenses and their cases. |
| Modes of Transmission | Skin contact with contaminated material, eye exposure and inhalation. |
| Signs and Symptoms | Keratitis signs include foreign body sensation in the eye, redness, itching, pain, photophobia, epiphora, edema, and blurred vision or loss of vision. Encephalitis is a slow onset, with weeks to months of headache, low-grade fever, stiff neck, mental state abnormalities, nausea, vomiting, lethargy, visual disturbances, and focal neurologic deficits, depending on the topographic site of lesions, followed by loss of consciousness, hemiparesis, seizures, and coma in later stages |
| Infectious Dose | unknown |
| Incubation Period | few days to several weeks |

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| **MEDICAL PRECAUTIONS/TREATMENT** |
| Prophylaxis | None available. |
| Vaccines | None available. |
| Treatment | Keratitis: topical application of biguanide and diamidine. Encephalitis: combinations of drugs including antibiotics such as pentamidine, cotrimoxazole, propamidine isethionate, azoles, amphotericin B, flucytosine, rifampin, azithromycin, amikacin, and anticancer drugs such as miltefosine, phenothiazines and thioridazine. |
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| **MEDICAL PRECAUTIONS/TREATMENT** |
| Surveillance | Can be detected in patient samples using culture-based methods, microscopy and PCR. |
| MSU Requirements | Report any exposures |

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| **LABORATORY HAZARDS** |
| Laboratory Acquired Infections (LAIs)  | None have been reported. |
| Sources | Aquatic environments, soil, dust; corneal scrapings, biopsy specimens, cerebrospinal fluid, brain tissue, saliva, nasal and skin specimens. 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 | sodium hypochlorite (2.5%) treatment for 15 minutes, 10% formalin, 70% ethanol |
| Inactivation | Inactivated by moist heat (60 minutes at 121oC) and dry heat (1 hour at 160-170oC). |
| Survival Outside Host | Survives in the environment for long periods of time. |

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| **SUPPLEMENTAL REFERENCES** |
| BMBL | <https://www.cdc.gov/labs/BMBL.html>  |
| CDC | <https://www.cdc.gov/acanthamoeba/about/index.html> |
| NIH Guidelines | <https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf>  |

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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-5pm406-577-7674**After business hours:**Bozeman Deaconess Hospital Emergency Room915 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. |