

PATHOGEN SAFETY DATA SHEET

Corynebacterium spp.

CHARACTERISTICS

Morphology	Gram-positive, slightly club shaped, small, pleomorphic, aerobic, non-spore forming bacilli. Nonmotile and catalase positive.
Disease	Diphtheria, upper respiratory tract illness.
Zoonosis	None.

HEALTH HAZARDS

Host Range	Humans. <i>C. ulcerans</i> and <i>C. pseudotuberculosis</i> are derived from animals but also cause disease in humans.
Modes of Transmission	Exposure to wounds, exposure to contaminated fomites, inhalation, accidental parenteral inoculation, ingestion.
Signs and Symptoms	Lesions on the skin or formation of pseudomembrane, pharyngitis or tonsillitis with sore throat, dysphagia, lymphadenitis, low grade fever, malaise, and headache; Cutaneous diphtheria is characterized by formation of lesions on the skin.
Infectious Dose	Unknown.
Incubation Period	2-4 days

MEDICAL PRECAUTIONS/TREATMENT

Prophylaxis	None available.
Vaccines	DTaP vaccine of Diphtheria, pertussis, and tetanus toxoid.
Treatment	antibiotic therapy with penicillin, cephalosporins, erythromycin, and tetracycline may be used in conjunction with antitoxin to eliminate the bacteria from the site of infection. Penicillin can be given intramuscularly or orally
Surveillance	Monitor for symptoms.
MSU Requirements	Report any exposures

LABORATORY HAZARDS

Laboratory Acquired Infections (LAIs)	Cases have been reported.
Sources	Exudates or secretions from nose, throat, nasopharynx, larynx, wounds, blood, skin. 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://www.cdc.gov/diphtheria/index.html
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	<p>During business hours: Bridger Occupational Health 3406 Laramie Drive Weekdays 8am -6pm. Weekends 9am-5pm</p> <p>After business hours: Bozeman Deaconess Hospital Emergency Room 915 Highland Blvd</p>

VIABILITY

Disinfection	Susceptible to 1:10 bleach:water, 70 % ethanol, accelerated hydrogen peroxide
Inactivation	Inactivated by moist heat (121°C for 15 min- 30 min)
Survival Outside Host	<i>C. diphtheriae</i> can survive on dry inanimate surfaces from 7 days to 6 months. Survival of <i>C. ulcerans</i> and <i>C. pseudotuberculosis</i> is 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.