MONTANA STATE UNIVERSITY | Office of Research Compliance

PATHOGEN SAFETY DATA SHEET

Human Coronavirus (Excluding SARS-CoV, MERS-CoV, SARS-CoV2)

CHARACTERISTICS	
Morphology	Enveloped viruses 120- 160 nm in diameter, with a positive stranded, capped and polyadenylated RNA genome that is 27-32 kb in size
Disease	Coronaviruses have a worldwide distribution, causing 10-15% of common cold cases. Infections show a seasonal pattern with most cases occurring in the winter months
Zoonosis	None.

HEALTH HAZARDS	
Host Range	Humans
Modes of Transmission	Infection can be transmitted through inhalation of respiratory droplet aerosols; virus can also be spread via the fecal-oral route, and through fomites
Signs and Symptoms	common cold, a self-limiting upper respiratory tract infection. Infection can lead to a number of illnesses such as bronchitis, gastroenteritis, progressive demyelinating encephalitis, diarrhea, peritonitis, nasal obstruction, rhinorrhea, sneezing, sore throat and cough. They can cause more severe lower respiratory tract infection, including pneumonia in infants, elderly and immunocompromised individuals.
Infectious Dose	Unknown.
Incubation Period	2-4 days

MEDICAL PRECAUTIONS/TREATMENT	
Prophylaxis	None available.
Vaccines	None available.
Treatment	No specific treatment available, treatment should be supportive
Surveillance	Coronavirus infections are not usually diagnosed due to the mild, self-limited nature of the disease. Research laboratories have used isolation methods, electron microscopy, serology and PCR-based assays to diagnosis coronavirus infections for surveillance studies
MSU Requirements	Report any exposures

LABORATORY HAZARDS	
Laboratory Acquired Infections (LAIs)	No infections have been reported to date. However, this may be an under-estimate of the number of incidences as symptoms are nonspecific and self-limiting.
Sources	Specimens from the upper or lower respiratory tract, stools. 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/coronavirus/types.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	• 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 0.1% sodium hypochlorite, 0.1% organochlorine, 10% iodophore, 70% ethanol and 2% glutaraldehyde. Resistant to 0.04% quaternary ammonium compound and phenolics
Inactivation	Inactivated by moist heat (15 minutes at 121°C)
Survival Outside Host	Survives up to six days in aqueous mediums and up to 3 hours on dry inanimate surfaces

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.