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 (LAlS)**
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.

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.

**ABS L2**
For all procedures utilizing infected animals.

SPILL PROCEDURES

**Small**
- 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).

**Large**

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.

**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.

SUPPLEMENTAL REFERENCES

**Canadian MSDS:**

**BMBL**
https://www.cdc.gov/labs/BMBL.html

**CDC**
https://www.cdc.gov/coronavirus/types.html

**NIH Guidelines**