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Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)

Morphology
SARS-CoV-2, also known as 2019-nCoV, is a β Coronavirus of the group 2B with at least 70% similarity in genetic sequence to SARS-CoV. SARS-CoV-2 is a new Coronavirus responsible for the outbreak of Coronavirus disease first detected in December 2019 (COVID-19).

Growth conditions
Serial passage in 5-6 week old mice. In vitro propagation in Vero cells.

Sources
BEI resources

Infectious Dose
No data available

Incubation period
2-14 days

Prophylaxis
None available

Vaccines
None available

Diagnosis
Real-Time Reverse Transcriptase (RT)-PCR for use with upper and lower respiratory specimens.

Treatment
None available. Supportive treatment only.

Surveillance
COVID-19 is a reportable disease in the USA

Emory Requirements
Report all exposures. Complete the health questionnaire and follow occupational health requirements if exposure were to occur

No LAIs have been reported for SARS-CoV-2. However, four LAIs have been reported for SARS-CoV.

SARS-CoV-2 RNA has been detected in upper and lower respiratory tract specimens, blood, stool.

Processing of human samples potentially infected with SARS-CoV-2; BSL2+ means BSL2 containment with BSL3 practices and PPE. Lab specific procedures (SOPs) will outline specific containment, practices and PPE. Surgical mask is required.

Isolation, initial characterization, and propagation of SARS-CoV-2; N95 respirator or CAPR/PAPR is required.

Animal work is conducted in an ABSL3 facility. Use a filter top cage on either a ventilated or non-ventilated cage rack for work with rodents.

Notify others working in the lab. Allow aerosols to settle. Don appropriate PPE. Cover area of the spill with paper towels and apply an EPA approved disinfectant, working from the perimeter towards the center. Allow 30 minutes of contact time before disposal and cleanup of spill materials.

Contact Emory’s Biosafety Officer (404-727-8863), the EH&S Office (404-727-5922), or The Spill Response Team (404-727-2888).

Flush eyes, mouth or nose for 15 minutes at eyewash station.

Wash area with soap and water for 15 minutes.

Immediately report incident to supervisor. Exposures are reported in H.O.M.E via PeopleSoft. Emory HR website > Self-Service > Workplace Health> Report

Yerkes: Safety Officer O: 404-727-8012 M: 404-275-0963

Routine cleaning and disinfection procedures using EPA-registered disinfectants is appropriate, including 10% bleach. Follow manufacturer's recommendations for use – dilution (i.e., concentration), contact time, and care in handling.

It is not known how long the SARS-CoV-2 survives on surfaces, preliminary information suggests the virus may survive a few hours or more on dry inanimate surfaces.

Personnel are required to don double nitrile gloves, closed toed shoes, solid front gown, eye protection with side shield, surgical mask. N95 respirator may be required based on risk assessment [Annual fit testing is required per Emory’s Respiratory Program].

All procedures involving live virus or samples potentially infected should be conducted in a biological safety cabinet (BSC). Hand hygiene should be performed as the last step in doffing PPE and before exiting the facility. The use of needles, syringes, and other sharp objects must be approved by the Biosafety officer. Waste must be autoclaved before disposal through Emory’s approved vendor.

References

CDC

WHO
https://www.who.int/emergencies/diseases/novel-coronavirus-2019

PubMed
https://discovery.ucr.ac.uk/id/eprint/1090633/1/1-s2.0-S1201971220300114-main.pdf

Canadian Pathogen Form

Exposures reported in H.O.M.E via PeopleSoft. Emory HR website > Self-Service > Workplace Health> Report

After Hours: OIM NP 404-686-8587
404-686-5500 PIC# 50464

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Report spill in the H.O.M.E system.

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