SARS-COV-2 LABORATORY RESEARCH SAFETY



The following is general information for those involved in the laboratory-based research of SARS-CoV-2. Contact occupational.health@cuanschutz.edu if you have any questions.





Infection with severe acute respiratory syndrome virus 2 (SARS-CoV-2) can occur through laboratory contact with the virus. The best protections against infection are proper personal protective equipment (PPE) usage, vaccination, hand hygiene, and surface decontamination. Procedures with a high likelihood of generating droplets or aerosols can be particularly dangerous. Additional precautions can be used to provide extra protection in these situations.

SARS-CoV-2 INFECTION

COVID-19

- Disease caused by the virus SARS-CoV-2
- Can be very contagious and spreads very quickly through airborne droplets
- Most often causes respiratory symptoms that feel like a cold, the flu, or pneumonia
- Symptoms
 - Fever or chills
 - Cough
 - Shortness of breath or difficulty breathing
 - Fatigue
 - Muscle or body aches
 - Headache
 - New loss of taste or smell
 - Sore throat
 - Congestion or runny nose
 - Nausea or vomiting
 - Diarrhea
- Most symptoms with COVID-19 last a few days to a few weeks, but some people develop "Long COVID" which can last an indefinite amount of time

VACCINATION FOR SARS-CoV-2

- Vaccination against COVID-19 is the most reliable way to protect yourself against infection
- Keep yourself up-to-date on COVID-19 vaccinations to have the highest level of available protection
- Being up-to-date means having every dose recommended by the CDC for your classification
 - Includes the primary series AND relevant boosters

PPE FOR SARS-CoV-2

- N95 respirator may be required where aerosol generating activities cannot be contained within a BSC or other containment device
 - Wearing of an N95 respirator requires medical clearance along with fit testing and enrollment in the respiratory protection program
- Face shield
- Do not reuse PPE used for work with biohazards. Dispose of all PPE used for work with biohazards as biohazardous waste.
- Always wash your hands after removing gloves and after handling biohazards
- See *Table 1* for more information on PPE

CONTROLS FOR SARS-CoV-2

- Additional protections for procedures likely to produce droplets or aerosols
 - Utilize biosafety cabinets
 - Additional precautions such as centrifuge safety cups, sealed centrifuge rotors, N95 respirators, or disposable mask with face shield



Follow proper exposure reporting protocols

- If you are injured on the job, promptly report the incident to your supervisor
 - Immediately call or email Occupational Health (303) 724-9145 during business hours
 - Outside of normal hours seek medical attention at emergency department or other healthcare provider
 - Fill out incident report for exposure to biological hazards
 - File a claim with University Risk Management
 - https://www.cu.edu/risk/file-claim
- Minor cuts and abrasions should be immediately cleansed with antibacterial soap • Protect injuries from exposure

Tell your physician you work with COVID-19

- Whenever you are ill, mention to your physician that you work with SARS-CoV-2
- COVID-19 has flu-like symptoms

Table 1. Personal protective equipment requirements for working with SARS-CoV-2					
	BSL-2 PPE Surgical mask, lab coat with closed cuffs, gloves, long pants/skirt/dress, eye protection	BSL-2+ PPE N95 respirator, solid-front lab coat with closed cuffs, double gloves, face shield, long pants/skirt/dress, eye protection	BSL-3 PPE N95 respirator, solid-front lab coat with closed cuffs, double gloves, face shield, long pants/skirt/dress, eye protection	Recommended up to date on COVID-19 vaccine	
Healthy patients screened and tested (-) for COVID-19					
Upper and lower respiratory samples (nasal, lung, sputum)	x				
Human blood, plasma, PBMC	Х				
Human non-respiratory tissues/cells/fluids	x				
Human GI tissues and feces	Х				
Unscreened patients, reasonably considered					
Upper and lower respiratory samples (nasal, lung, sputum)		x		x	
Human blood, plasma, PBMC	X			X	
Human non-respiratory tissues/cells/fluids	x			x	
Human GI tissues and feces		X		X	
Suspected COVID-19 (+) patients					
Upper and lower respiratory samples (nasal, lung, sputum)		x		х	
Human blood, plasma, PBMC	Х			Х	
Human non-respiratory tissues/cells/fluids	x			х	
Human GI tissues and feces		x		X	
Confirmed COVID-19 (+) patients					
Upper and lower respiratory samples (nasal, lung, sputum)		x		X	Occupational Heal
Human blood, plasma, PBMC	Х			Х	website:
Human non-respiratory tissues/cells/fluids	x			х	
Human GI tissues and feces		x		Х	
SARS-CoV-2 culture and propagation			x	x	