

This document applies to all USC research involving COVID19 patient samples. These are general guidelines and the USC IBC may require additional or more stringent practices depending upon the research design.

IBC REVIEW AND APPROVAL REQUIRED

Before initiating any project with SARS-CoV-2 patient samples, the Principal Investigator(s) must complete and submit a Biohazard Use Authorization (BUA) or amend a relevant active BUA in iStar to reflect the new research.

The project may commence only after Institutional Biosafety Committee (IBC) review and approval.

PATIENT SAMPLES SUSPECTED OR CONFIRMED POSITIVE FOR SARS-CoV-2 MUST BE USED AT BSL2+

BSL2+ lab space must be isolated and self-contained. A tissue-culture room with a door that closes, a hand-washing sink, and negative airflow is ideal. Access to the BSL2+ space must be restricted to those involved in the experiment. A site-specific and activity-specific risk assessment to identify and mitigate risks is required prior to the beginning of the project.

Initial processing (before inactivation) of all CoV-2 positive specimens including blood, urine, feces, respiratory samples and secretions, and all manipulations that may cause splashes, droplets, or aerosols of infectious materials, must take place in a certified biological safety cabinet (BSC).

Specimens transported from the clinic to the laboratory space must be in tightly-sealed, leak-proof containers.

TRAINING

Research staff members must undergo project-specific training.

PPE

PPE that is worn in the BSL2+ space must not be worn in other lab spaces. The PPE includes double gloves, disposable front-closed gown, protective sleeve covers and face shield. Depending on the procedures to be done, respiratory protection such as an N95 may be required.

CENTRIFUGATION

Centrifugation of specimens should be performed using sealed centrifuge rotors or sample cups. These rotors or cups must be loaded and unloaded in a BSC.

BIOHAZARDOUS WASTE

Collect all waste within the BSC while conducting experiments and then remove the small biohazard waste bag and place it in a larger biohazard waste container.

DISINFECTION

Appropriate disinfectants with proven activity against enveloped viruses include hypochlorite (bleach), alcohol,

hydrogen peroxide, quaternary ammonium compounds, and phenolic compounds. We recommend using a freshly made 1% household bleach (1:100 dilution) for surface cleaning and 10% (1:10 dilution) decontaminate spills.

EPA Approved disinfectants for SARS-CoV-2: <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>.

If your laboratory does not have an approved BSL2+ workspace, please contact USC Biosafety at biosafety@usc.edu.

Non-propagative diagnostic laboratory work (e.g. sequencing, nucleic acid amplification, flow cytometry of fixed samples) should be conducted at facilities and in accordance with procedures equivalent to BSL-2 in a lab space with a controlled ventilation system that maintains negative airflow. Special measures must be taken to protect individuals working with SARS-CoV-2 RNA including restricted use of sharps and protection against contamination of the skin, mucous membranes and laboratory working surfaces.

SHIPPING AND RECEIVING SARS-CoV-2 MATERIALS

Patient specimens from suspected or confirmed cases should be transported as UN3373, "Biological. Substance, Category B".

Personnel must be trained to pack and ship Biological Materials. For training information please refer to EH&S website: <https://ehs.usc.edu/training/registration/>.

Receiving the SARS-CoV-2 materials from other countries requires a CDC Import Permit for infectious materials. For more information: <https://www.cdc.gov/cpr/ipp/faq.htm>.

NOTE: Growing SARS-CoV-2 in culture requires BSL3 containment and practices.

Virus isolation in cell culture, initial characterization of viral agents recovered in cultures of SARS-CoV-2 or the propagation of virus must be performed at Biosafety Level 3 (BSL-3). For more information please contact USC High Containment Officer, Dr. Kathryn O'Brien at kathryno@usc.edu or (617) 640-0035.

RESOURCES

CDC's Interim Laboratory Biosafety Guidelines - <http://tiny.cc/cdc-inter-bio-guide>

WHO's Laboratory Biosafety Guidelines - <http://tiny.cc/who-bio-guide>

