

SARS-CoV-2 (COVID-19) Research Laboratory Biosafety Guidelines

Research Activities with Known or Likely Infected Specimens from Humans or Animal Models	Assigned Biosafety Level	Contact for Help, Approvals & Access to Appropriate Laboratory Facilities
<ul style="list-style-type: none"> • Storage and laboratory work with seed stocks, working stocks or specimens¹ with the intent to grow or use live virus at USF. <ul style="list-style-type: none"> • Virus isolation, characterization and/or expansion • Recovery of viral agents in cultures of SARS-CoV-2 specimens • Viral cultures or isolates should be transported as Category A, UN2814, “infectious substance, affecting humans”² • Use of live SARS-CoV-2 virus in functional assays: <ul style="list-style-type: none"> • Plaque/Focus Forming Unit assays • Culturing patient samples in cell-based assays • Serologic virus capture/binding assays • Therapeutic MIC assays • Live cell sorting with intact virus • Genetic modification of virus • Use of live SARS-CoV-2 virus in animal 	BSL-3/ABSL3 ³	<p>Thomas Unnasch, Ph.D., Director, USF Global Health BSL-3 facility (tunnasch@usf.edu)</p> <p>USF Biosafety Office (biosafety@usf.edu) USF Biosafety Website</p>
<ul style="list-style-type: none"> • Procedures with a high likelihood to generate aerosols or droplets • Processing, aliquoting or preparing specimens¹ for research use and storage • Preparation of chemical- or heat-fixed specimens¹ for microscopic analysis • Nucleic acid extraction of specimens¹ for molecular analysis • Preparation of inactivated specimens for other laboratory assessments • Performing diagnostic tests (e.g. serology) that do not involve activities with the potential to propagate virus 	BSL-2 with enhancements ⁴	<p>USF Biosafety Office (biosafety@usf.edu) USF Biosafety Website</p>
<ul style="list-style-type: none"> • Molecular analysis of already extracted nucleic acid preparations • Analysis of specimens¹ that have been inactivated • Final packaging of specimens¹ already in a sealed, decontaminated primary container for transport to collaborating laboratories for additional analyses <ul style="list-style-type: none"> • Specimens from suspected or confirmed cases should be transported as UN3373, “Biological Substance, Category B • Pathologic/microscopic examination of fixed specimens¹ (e.g. formalin-fixed tissues or glutaraldehyde-fixed grids). • Routine staining and microscopic analysis of fixed smears • Performing electron microscopic studies with glutaraldehyde-fixed grids 	BSL-2	<p>USF Biosafety Office (biosafety@usf.edu) USF Biosafety Website</p>

***Please note that all proposed research with SARS-CoV-2 (COVID-19) requires review and approval by the USF Institutional Biosafety Committee (IBC) coordinated by the Biosafety Office, biosafety@usf.edu.**

¹ Specimens are defined as, but not limited to, blood, serum, plasma, tissues, feces, urine, sputum, mucosal swabs or washes/secretions collected from any species.

² For assistance with required import permits and export permits contact **USF Biosafety Office** (biosafety@usf.edu) or **USF Export Control** (exportcontrol@usf.edu).

³ Animal Biosafety Level-3 (ABSL-3)

⁴ Required Enhancements to standard BSL2:

- Any procedure with the potential to generate aerosols or droplets (e.g. vortexing, cell sorting, ELISA plate washing) will be performed in a certified Class II Biological Safety Cabinet (BSC). BSC
- must be decontaminated with an EPA approved disinfectant for coronavirus.
- Personnel will wear a closed front gown, face shield and double pair of gloves.
- Centrifugation of specimens must be performed using sealed centrifuge rotors or sample cups.
- The use of sharps should be eliminated wherever possible.