

## 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"> <li>Storage and laboratory work with seed stocks, working stocks or specimens<sup>1</sup> with the intent to grow or use live virus at UCR.               <ul style="list-style-type: none"> <li>Virus isolation, characterization and/or expansion</li> <li>Viral cultures or isolates should be transported as Category A, UN2814, “infectious substance, affecting humans”<sup>2</sup></li> </ul> </li> <li>Use of live SARS-CoV-2 virus in functional assays:               <ul style="list-style-type: none"> <li>Plaque/Focus Forming Unit assays</li> <li>Serologic virus capture/binding assays</li> <li>Therapeutic minimum inhibitory concentration (MIC) assays</li> <li>Live cell sorting with intact virus</li> </ul> </li> <li>Use of live SARS-CoV-2 virus in animal (ABSL-3)</li> <li>Performing research activities with the potential to propagate virus</li> </ul>	BSL-3/ABSL-3	<p><b>Tran Phan</b>  <b>Acting Biosafety Officer (BSO) / High-Containment Laboratory Director (HCLD)</b>            Environmental Health &amp; Safety            Phone: 951-827-4246            Email: <a href="mailto:tran.phan@ucr.edu">tran.phan@ucr.edu</a></p> <p><b>EH&amp;S Biosafety</b>            Email: <a href="mailto:ehsbiosafety@ucr.edu">ehsbiosafety@ucr.edu</a></p>
<ul style="list-style-type: none"> <li>Processing, aliquoting or preparing specimens<sup>1</sup> for research use and storage</li> <li>Preparation of chemical- or heat-fixed specimens<sup>1</sup> for microscopic analysis</li> <li>Nucleic acid extraction of specimens<sup>1</sup> for molecular analysis</li> <li>Preparation of inactivated specimens for other laboratory assessments</li> <li>Performing diagnostic tests (e.g. PCR or serology) that <b>do not</b> involve activities with the potential to propagate virus</li> </ul>	BSL-2 with Enhancements <sup>3</sup>	<p><b>Institutional Biosafety Committee (IBC)</b>  <a href="https://research.ucr.edu/ori/ibc">https://research.ucr.edu/ori/ibc</a>            Email: <a href="mailto:ibc@ucr.edu">ibc@ucr.edu</a></p> <p><b>Institutional Animal Care and Use Committee (IACUC)</b>  <a href="https://research.ucr.edu/ori/iacuc">https://research.ucr.edu/ori/iacuc</a>            Email: <a href="mailto:iacuc@ucr.edu">iacuc@ucr.edu</a></p>
<ul style="list-style-type: none"> <li>Molecular analysis of already extracted nucleic acid preparations</li> <li>Analysis of specimens<sup>1</sup> that have been inactivated by a method approved by UCR IBC.</li> <li>Final packaging of specimens<sup>1</sup> already in a sealed, decontaminated primary container for transport to collaborating laboratories for additional analyses               <ul style="list-style-type: none"> <li>Specimens from suspected or confirmed cases should be transported as UN3373, “Biological Substance, Category B</li> </ul> </li> <li>Pathologic/microscopic examination of fixed specimens<sup>1</sup> (e.g., formalin-fixed tissues or glutaraldehyde-fixed grids).</li> <li>Routine staining and microscopic analysis of fixed smears</li> </ul>	BSL-2	

**\*Please note that all proposed research with SARS-CoV-2 (COVID-19) requires review by the Institutional Biosafety Committee (IBC) and may require approval of a Standard Operating Procedure (SOP) for the research, which will be coordinated by EH&S Biosafety, [ehsbiosafety@ucr.edu](mailto:ehsbiosafety@ucr.edu).**

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

<sup>2</sup>For assistance with *required* import permits and export licenses contact [ehsbiosafety@ucr.edu](mailto:ehsbiosafety@ucr.edu) or [Sponsored Programs Administration Export Controls](#).

<sup>3</sup>Enhancements to standard BSL-2 based on risk assessment:

- 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)
- Personnel may be required to wear additional personal protective equipment (PPE) such as closed front gown, face shield and double pair of gloves
- Centrifugation of specimens must be performed using sealed centrifuge rotors or sample cups
- Eliminate or minimize the use of sharps wherever possible