

BIOSAFETY & BIOCONTAINMENT ACTION GRID: RESEARCH ACTIVITIES INVOLVING COVID-19 SPECIMENS & SARS-CoV-2 MATERIALS

	Activities/Materials Examples	IBC Action Needed	Key Biosafety Elements
<p>BSL-3 <i>Lab research activities involving the handling of the SARS-CoV-2 virus or aerosol-generating procedures with viable clinical specimens or tissues known to contain the virus</i></p>	<ul style="list-style-type: none"> • Virus isolation in cell culture • Initial characterization of viral agents recovered in cultures of SARS-CoV-2 • Plasmablast/B cell processing of large volume specimens known to contain the virus 	<p>Restricted activity. Contact Biosafety Officer (BSO) directly for information.</p>	<p>Operational BSL-3 lab with personnel who have completed BSL-3 lab training through a recognized program and have been deemed proficient by experienced BSL-3 laboratorians in conjunction with the BSO.</p>
<p>BSL-2 with Enhanced Biocontainment Practices <i>Aerosol-generating lab activities with viable/unfixed clinical specimens from known or strongly suspected COVID+ individuals</i></p>	<ul style="list-style-type: none"> • Centrifugation, vortexing or pipetting of viable clinical specimens (i.e. blood components, nasal swabs, sputum) collected from known or strongly suspected infected patients for research purposes. 	<ul style="list-style-type: none"> • Submit completed COVID-19 Specimen Intake form, IBC amendment, all applicable SOPs, permits and IRB approvals to VEHS Biosafety. • Complete a risk assessment with VEHS Biosafety. 	<ul style="list-style-type: none"> • Facilities & biocontainment practices will be commensurate with those outlined in IBC Policy: Biosafety Level 2 with Enhanced Practices (BSL-2+) for Basic Research Applications.
<p>BSL-2 <i>Lab research activities with materials that do not involve direct handling of viable/unfixed clinical specimens from known or strongly suspected COVID+ individuals</i></p>	<ul style="list-style-type: none"> • Using automated instruments and analyzers • Staining and microscopic analysis of fixed smears • Examination of bacterial cultures • Pathologic examination and processing of formalin-fixed or otherwise inactivated tissues • Molecular analysis of extracted nucleic acid preparations • Final packaging of specimens for transport • Using inactivated specimens, such as specimens in nucleic acid extraction buffer • Performing electron microscopic studies with glutaraldehyde-fixed grids 	<p>If activities will be carried out in a Vanderbilt lab research space, then submit an IBC amendment including the following details:</p> <ul style="list-style-type: none"> • <u>What</u> materials will be received and from whom (if RDNA or pathogen-related synthetic RNA, provide details of genetic elements and how they will be used) • What activities will take place, for what purpose, and for how long • Where these activities will take place • Who will be doing the work • Identify any aerosol-generating procedures (centrifugation, sonication, etc.) and what measures will be taken to contain aerosols (i.e., carrying out procedures in a biosafety cabinet). 	<p>Vanderbilt research labs and associated activities that need to carry out activities under BSL-2 conditions need the following:</p> <ul style="list-style-type: none"> • An approved registration with the entity's Institutional Biosafety Committee (IBC) • Personnel who have completed biosafety training and the PI/lab supervisor has documented their proficiency at carrying out technical procedures under BSL-2 conditions. • Lab space that is: <ul style="list-style-type: none"> ○ restricted access and physically separated from carpeted areas and food/drink areas; ○ free of fabric furniture, plants and animals not associated with research; ○ equipped with and handwashing sink in the space and an eyewash in close proximity; ○ equipped with a method for biowaste decontamination; ○ equipped with a BSC, centrifuge with sealed rotors or any other containment equipment as determined through biorisk assessment.
<p>Risk assessment grid based on:</p> <ul style="list-style-type: none"> • CDC's Frequently Asked Questions about Laboratory Biosafety and SARS-CoV-2 • CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 5th ed. <p>Prepared by VEHS Biosafety & the Vanderbilt Institutional Biosafety Committees 3/2020</p>			