

SARS-CoV-2 (COVID-19) Research Laboratory Safety Guidance

Please note that all procedures will be subject to IBC review and approval. The IBC will set the finalized biosafety level based on their risk assessment.

Research Activities with Known or Likely COVID-19 Infected Specimens from Humans or Animal Models	Assigned Biosafety Level	Contact for Questions, 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 Rutgers. <ul style="list-style-type: none"> Virus isolation, characterization and/or expansion Viral cultures or isolates should be transported as Category A, UN2814, "infectious substance, affecting humans"² Use of live non-attenuated SARS-CoV-2 virus in functional assays: <ul style="list-style-type: none"> Plaque/Focus Forming Unit assays Serologic virus capture/binding assays Therapeutic MIC assays Live cell sorting with intact virus Use of live non-attenuated SARS-CoV-2 virus in animal 	BSL-3/ABSL-3 ³	<p>David Alland, MD Director of the Regional Biocontainment Laboratory allandda@njms.rutgers.edu</p> <p>and</p> <p>Rutgers Environmental Health and Safety biosafety@rutgers.edu Phone: 848-445-2550</p>
<ul style="list-style-type: none"> Processing, aliquoting or preparing specimens¹ for research use and storage Preparation of chemical- or heat-fixed specimens¹ for microscopy and other laboratory procedures utilizing a validated and approved inactivation method Nucleic acid extraction of specimens¹ for molecular analysis Performing diagnostic tests (e.g. serology) that <u>do not</u> involve activities with the potential to propagate virus Inoculating bacterial or mycological culture media 	BSL-2 <i>with enhancements</i> ^{4,5}	<p>Rutgers Environmental Health and Safety biosafety@rutgers.edu Phone: 848-445-2550</p>
<ul style="list-style-type: none"> Molecular analysis of already extracted nucleic acid preparations Analysis of specimens¹ that have undergone an appropriate inactivation method (<i>contact Rutgers Biological Safety for specific guidance</i>) 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 chemical- or heat-fixed specimens¹ (e.g. formalin-fixed tissues or glutaraldehyde-fixed grids) Routine staining and microscopic analysis of fixed smears Routine examination of bacterial and mycotic cultures Research with full length viral genome⁶ 	BSL-2 ⁴	<p>Rutgers Environmental Health and Safety biosafety@rutgers.edu Phone: 848-445-2550</p>

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

²Import permits are required for any importation into the US, and some strains require import permits for shipments within the US. Contact REHS with questions at biosafety@rutgers.edu. Export requests must be approved by RU Export Control (rp627@ored.rutgers.edu) and REHS (biosafety@rutgers.edu). Persons shipping must be current with IATA training.

³Animal Biosafety Level-3 (ABSL-3)

⁴All work assigned as "BSL2" or "BSL2 with enhancement" will be performed inside a certified BSC

⁵Required Enhancements to standard BSL2:

- Isolated room location, with limited staff entry, reviewed by REHS and approved by the IBC.
- BSC will be decontaminated with an EPA approved disinfectant for coronavirus. Alcohols will not be used as the sole disinfectant for cleaning or disinfection of surfaces or waste. BSL3 work practices are required (e.g. chemical disinfection in cabinet before autoclaving).
- Personnel will wear a closed front gown, face shield and double pair of gloves. If closed front gowns are not available, designated lab coats must be worn. Coversleeves are recommended.
- Centrifugation of specimens must be performed using sealed centrifuge rotors or safety cups.
- The use of sharps, Pasteur pipets included, should be eliminated wherever possible.

⁶Work must be in designated location, without concomitant work with tissue culture or in vitro translation assays. Contact REHS for additional guidance.

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