

Document 5

Biosafety Considerations during COVID-19

All biobanks handling biospecimens including COVID-19 will need to obtain biosafety approval from their institution. The considerations below identify aspects that are specific to COVID-19.

1. All personnel are required to take their institution's Biosafety course at <insert institution name> and/or provide clear evidence of equivalent in training: all biosafety training is completed before commencing work within the lab.
2. As biospecimens are collected from individuals who have been tested positive for COVID-19, per the Canada Public Health Agency guidelines, they will be handled in accordance with CL2 practices with additional precautions. As the agent is identified as an inhalation hazard and consequence of exposure is significant, requirements will be added to increase the containment level of the CL2 lab at <insert institution name>. These requirements are described in detail below.
3. Users of the laboratory for the conduct of this research will receive the standard operating procedure (SOP) established for this biobank <insert SOP name for handling and processing biospecimens> and orientation to specialized procedures by senior personnel. This biobank encompasses collection of material that is appropriate for CL2 practices and precautions.
4. Description of the biohazard considerations, decontamination protocols and key procedures are detailed below.
5. Procedures and handling of biological materials will be performed at the <insert institution name and specific location e.g room number> which have restricted access and with biohazard signs and appropriate hand washing facilities and eye-wash stations, as well as emergency procedures in place. The department laboratory manager provides all lab personnel with a training session. All lab personnel will wear personal protective equipment including two pairs of gloves, gowns, and appropriate eye and foot protection as detailed below.
6. Researchers working within the biobanking room where the sample is being processed must meet CL2 practices with additional precautions. Access to the room will be limited during sample processing to minimize activity and traffic within the area; doors will be closed and signage will be displayed on the door on the outside of the biobanking room to indicate a CL2 practices with additional precautions containment level.
7. Along with standard protective clothing such as closed toe shoes, long pants etc, personnel will be required to wear solid front gowns (back-closed), safety goggles or face shield and gloves when processing the samples within the biobanking room. As some of the processing (e.g. centrifugation) will take place outside the biological safety cabinet, double gloves will be used (different colored gloves for inner and outer; inner pair to have long cuffs) with the outer pair being removed before the hands are taken out of the biological safety cabinet. N95 masks are not required as all operations whereby the samples are not within a closed container will be performed inside the biological safety cabinet.
8. All floors, laboratory benches and other surfaces where biohazardous materials are handled will be decontaminated as often as required. The three main disinfectants used are 70% ethanol, 1%

sodium hypochlorite (the active ingredient in bleach) or accelerated hydrogen peroxide. 70% ethanol will be prepared at least once a week and will be used for surface disinfection of the biological safety cabinet (BSC) and of material entering or leaving the BSC. In case of a spill inside the BSC the contact time will be 20 minutes for cabinet surfaces. In the case of a spill inside the BSC, all non-metal material will be disinfected for 20 minutes with more concentrated bleach (5% sodium hypochlorite). For a spill outside the BSC disinfect floor, walls, etc. for 20 minutes with more concentrated bleach (5% sodium hypochlorite). All surface material and equipment will be decontaminated with 70% ethanol before removing them from the cabinet. Cabinet surfaces, all equipment (e.g. centrifuge), and all other potential surfaces (e.g. door handles, freezers etc) will be sprayed with 70% ethanol, left for 10 minutes (or accelerated hydrogen peroxide for 5 min) and wiped down daily after work is completed. Safety goggles and face shields are also to be decontaminated after each use.

9. Only centrifuges with sealed centrifuge buckets within the biobanking room will be used to centrifuge samples. Safety buckets will be taken out and used for loading and unloading of samples in the centrifuge. Samples will be loaded into the safety buckets inside a BSC prior to being transported into the centrifuge for centrifugation.
10. All biological related waste and sharps are disposed of according to the 'Biohazardous Waste SOP' and 'Handling and Disposal of Needles and Other Sharps' <these documents should be provided to the biosafety officer>. Decontamination protocol includes 10% bleach (v/v) final for liquid biohazards, sharps (if any), disposable transfer pipettes, plasticware, tubes and gloves will be collected in yellow sharps containers within the biological safety cabinet. When filled to the level indicated on the container, it will be tightly closed and properly sealed, sprayed for decontamination before removing from the biological safety cabinet for disposal. Pipettes may be decontaminated in a container with 10% bleach prior to disposal in yellow sharps container.
11. All non sharp biohazardous waste will be disposed of inside biohazard pails which will be lined with double biohazardous waste bags. The pails will be sealed with a lid equipped with a gasket to ensure secure sealing.
12. All gowns used in the biobank laboratory must be autoclaved prior to being laundered.
13. Upon leaving the biobank laboratory, personnel will wash their hands at the most convenient hand washing station. If this station is outside of the biobank laboratory then personnel will be required to hand sanitize prior to leaving the laboratory and using the hand washing station.
14. Where applicable, transportation of biospecimens will be performed by personnel with Transportation of Dangerous Goods Class 6.2 training and certification for biological materials including clinical samples and viruses. The biospecimens will be transported in a secondary container that is sealed and leak-proof. The biospecimen tubes are to be placed in a biohazard bag with absorbent material in case of leakage or breakage of tubes. Biospecimens arriving at the biobank in the secondary container will be unpacked within the biological safety cabinet to take out the contents for processing. To minimize risk of exposure/contact from tubes/containers containing the biospecimens from the clinical lab, gauze pads soaked with disinfectant can be placed on the tops
15. If data entry is to be conducted using the computer within the biobanking room, a cover will be available for the keyboard which can be decontaminated after each use.