

Imaging Request Form

The University of Massachusetts Chan SCOPE imaging core facility offers microscopy equipment and imaging services for BSL2 categorized samples of human or animal origin. The safety of the staff and users of the facility is the ultimate concern when imaging unfixed samples containing unscreened human or nonhuman primate cells, known infectious agents (\geq risk group 2), or recombinant or synthetic nucleic acid molecules or vectors. Therefore, information about the sample source and potentially biohazardous agents is critical to conduct an effective biosafety risk assessment.

Appropriate biosafety approval by the Institutional Biosafety Committee (IBC) and the core facility is required prior to the use of the machines. This includes filing a description of the experiments planned for the SCOPE facility with the facility staff to be kept on file at the SCOPE Core.

Please provide this Imaging Request Form to the SCOPE Core upon scheduling imaging or immediately thereafter, and no later than TWO DAYS PRIOR to your training or imaging date. This form (page 2) must be filled out completely and signed by the principal investigator for EACH sample type requested, *even for self-imaging.*

Without the proper risk assessment enabled by this questionnaire and supporting information, the samples will **NOT** be imaged. Refer to our web site: <http://www.umassmed.edu/scope/> for available instruments and services.

Assignment of biosafety levels is the sole responsibility of the IBC and is not to be determined by the SCOPE Core staff or director. The safety of the staff and users of the facility is the ultimate concern, so the SCOPE Core has the option to confer with the IBC prior to scheduling any imaging.

Live sample imaging is a powerful technique and is commonly performed on many confocal microscopy systems. The guidelines provided below are intended to ensure that researchers are provided with proper protection from potential biological hazards during live sample imaging.

Live sample imaging in the SCOPE facilities may potentially involve applications under two Biosafety Levels (BSLs):

A. BSL1: Yeast, *E coli*, well-established animal (nonhuman primate) cells, and other organisms not known to cause disease in humans of normal health (refer to the [BMBL-6](#) for further guidance).

B. BSL2: All human cells (including cultured cell lines like HeLa) which may contain bloodborne pathogens (HIV, HCV, HBV, EBV, etc.), cell lines which have been transformed by replication deficient viral vectors (which have not been confirmed to be free RCV by PCR or other approved methods), and other specimens containing microorganisms classified under BSL-2 (refer to the [BMBL-6](#) for further guidance).

Imaging Request Form

Your Name:

Laboratory (PI):

Start Date of Imaging:

IBC Docket Number:

IBC approved imaging biosafety level
(circle one):

BSL1	BSL2
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1. What is the appropriate biosafety level for the samples to be submitted for imaging (check one)?
(for routine *in vitro* procedures, not the imaging procedure)

BSL-1 BSL-2

2. Will the samples be fixed, with all potentially infectious agents inactivated?

Yes No If yes, describe the fixation method:

3. Will the samples be of human origin (or other Non-Human Primate)?

Yes No If not of human origin, please identify the cells to be sorted:

4. Will the samples contain known infectious agents?

Yes No If yes, list the infectious agent(s):

5. Will the samples contain recombinant or synthetic nucleic acids (r/s NA)?

Yes No If yes, list the vector by name and describe the method of delivery of the r/s NA molecules (e.g. transfection with expression plasmid, lentivirus transduction):

6. If a viral vector will be used for transduction of cells, was the original viral vector able to infect human cells?

Yes No N/A

7. If a viral vector will be used for transduction of cells, was the vector stock tested and shown to be free of replication-competent virus?

Yes No N/A

8. Will exogenous genes be transferred into the cells?

Yes No N/A If yes, list the genes:

9. Are any of these genes oncogenes or toxins?

Yes No N/A If yes, list the genes:

Principal Investigator Signature: _____

Date: _____

If you have any questions, please contact SCOPE@umassmed.edu.

Updated: February 16, 2023

SCOPE Required Standard Operating Procedure (SOP) for BSL2 Samples

Adherence to this SOP is also strongly recommended for imaging applications involving BSL-1 materials

A. Prior to utilization of live imaging equipment, all imaging of agents classified at BSL-2 and/or recombinant DNA materials must be approved and registered through the IBC and the Imaging Request Form must be submitted to the SCOPE Core.

B. All sample/slide preparation must be performed within a certified biological safety cabinet (BSC) under the conditions established under the IBC registration.

C. Research staff will don proper PPE during preparation and transport of samples/slides to include lab coat, examination gloves, proper laboratory attire, and eye protection where necessary.

D. Imaging dishes must be tight-fitting and or designed to be fully closable (for example, ibidi USA “microslides,” in Vitro Scientific “Multiwell” glass bottom plates), with parafilm utilized to further secure lids and minimize risk of spills. The outer surfaces of the dishes must be wiped with an appropriate disinfectant (refer to biological registration) prior to packaging for transfer to core facility.

E. Transfer of Potentially Biohazardous Materials: If transportation from laboratory to microscopy facility (or vice versa) is required, samples must be transported within a closed secondary container displaying universal biohazard signage on the exterior surface, with sufficient absorbent materials in the bottom of the container to absorb contents in the case of leakage.

G. Signage detailing the biosafety level of the agent must be posted on entry door of room housing microscope by research staff while conducting procedures involving potentially biohazardous agent(s).

H. Disposable gloves will be worn when removing dishes from secondary container and placing onto the stage, fresh gloves will be donned prior to contacting the microscope, computer, or other equipment.

I. After completing imaging, research staff will remove samples from the microscope and wipe down the microscope stage with tissue saturated with disinfectant. Unless otherwise specified (by the conditions of the biological registration and with written verification from the Microscopy Core), 70% ethanol (EtOH) solution will be utilized for disinfection of microscope surfaces and components. Stock of 70% EtOH solution expire 60 days after preparation and will be provided by the SCOPE.

J. Spills: In the event of any spill, notify SCOPE staff immediately. If the event of a spill, users will leave room immediately to limit exposure to aerosols and avoid reentry into the laboratory for at least 20 minutes to allow for settling of aerosols. SCOPE staff will don appropriate PPE prior to entering space to conduct cleanup.

1. Work surface (benchtop, floor, etc.) spills: spills must be cleaned thoroughly with an appropriate disinfectant (70% EtOH, unless otherwise specified). Waste materials generated during spill response will be managed/disposed of by research staff as regulated medical waste.

2. Minor spills resulting in contamination of outer surface areas microscopy equipment: If spill is minor and only affects outer/accessible surface of scope, research staff will wipe down area thoroughly with tissue damp with disinfectant (70% EtOH). Waste materials generated during spill response will be managed/disposed of by research staff as regulated medical waste.

3. Major spills resulting in potential contamination of inner/inaccessible areas of microscope: research staff will leave room immediately and notify SCOPE staff of the incident. Due to presence of electrical shock hazard and potential for damage to sensitive components of the microscope, research staff will not attempt to disinfect or otherwise access internal surfaces of microscope.

K. Hands will be thoroughly washed with soap and water immediately upon completing above tasks.

L. Following completion of imaging tasks, all samples must be transferred (per line III.E) back to the host laboratory for disposal per conditions of the approved IBC registration.

III. Additional Training Requirements: SCOPE staff and users will be trained per the conditions of this SOP prior to conducting live imaging procedures involving BSL-1 and BSL-2 specimens. Research staff will also be required to complete any training as required by the SCOPE Core prior to use of the facility.

Submit this form to SCOPE@umassmed.edu when completed. Thank you!