

Imaging Live Cells

This SOP applies to imaging live cells.

Many imaging processes cannot be conducted in a biosafety cabinet or other aerosol-containment device owing to the size or sensitivity of the equipment. Therefore, alternative safety measures are needed when imaging biohazardous materials. Imaging processes that involve live cells in open containers or flow cells require additional PPE and/or splash shields to protect from splashes/sprays/aerosols. Imaging processes involving only closed containers may be done at lower containment levels depending on the risk assessment.

Procedure:

1. Prepare samples for imaging within a biosafety cabinet
2. Transport samples in secondary containment to the imaging facility if leaving the containment facility (see Material Transport SOP)
3. Perform imaging
4. Return samples to secondary containment
5. Dispose of waste following biohazardous waste handling requirements
6. Disinfect imaging station using an appropriate disinfectant

Cautions & Considerations

- Eye protection (safety glasses or goggles) or a splash shield is required if a splash or spray is anticipated, e.g., from imaging open containers or flow cell setups
- A respirator may be required for imaging open containers of airborne-transmissible pathogens or if aerosolization is likely (e.g., some flow cell setups)
- Use plastic alternatives to glass whenever possible (e.g., slide covers, slides) and avoid handling required glass items with hands (forceps are recommended)
- Use of a secondary transport container is good practice even if the imaging station is in the same room

- If liquids are aspirated during the imaging process, see the Aspiration Flask Setup, Use & Maintenance SOP
- If the imaging setup involves lasers(open-beam or enclosed), contact EH&S for additional guidance

Resources

- [Biosafety Manual](#)
- [BMBL 5th Edition](#)