

Light Microscopy, CMI
Anatomy, School of Medicine, NUI Galway
STANDARD OPERATING PROCEDURE

SOP No: 4-LM

Rev 1: June 2020 Supersedes:

TITLE: SOP for booking, use and cleaning of light microscopes in the Human Biology Building during the COVID-19 Pandemic

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DATE: June 2020

CHECKED BY:

APPROVED BY:

DATE EFFECTIVE:

Introduction

This SOP describes the procedure users must follow to book, use and clean of Light Microscopes. During the early stages of the reopening, LM will be performed by the STOs and trained users only. These measures must be taken in order to prevent transmission of COVID-19 within the Human Biology Building and to also allow efficient contact tracing as required if an individual working in the building tests positive.

Booking

1. Use the Clustermarket system with your login and password to book a microscope session.
2. Bookings will be made at least 48 hrs in advance, so plan ahead your imaging session. There will be no full cancellations nor swapping sessions with other user with less than 24 hrs. Last minute cancellations (less than 24 hrs) will still be charged full.
3. Sessions can only be booked in 1 hr increments until further notice. Priority will be given to longer imaging sessions, than shorter but more numerous sessions.
4. There will be an automatic time lag (1 hr) between sessions. This is for properly cleaning the equipment and letting at least 30 mins for air exchange in the room before the next user.
5. Only trained users will be able to book and use the system at this moment. There will be no new training until further notice. This is to maintain social distancing guidelines. Groups may need to consider nominating a previously trained and experienced user to be responsible for carrying out their imaging until further notice. There will also be limited troubleshooting at the moment.

6. The booking system will be constantly monitored. Any impromptu (unbooked) use of the microscope will be cancelled and this reiterated misconduct will have their autonomous user rights removed.

Before starting

1. Wipe down microscope slides, or other sample holders and containers with 70% ethanol before coming into the facility. For users not carrying out their own imaging, all samples or slide boxes must be sanitized and cleaned down with 70% ethanol prior to entering the microscope room.
2. Wash your hands (scrubbing for at least 40 seconds) or use hand sanitiser, choose appropriate PPE and immediately proceed to your planned work area.
3. Smartphones should be wiped clean before and after entering the room. They should be put inside a ziploc bag before and thorough the session.
4. You must arrive at the microscope room up to 15 minutes before the pre-arranged time slot.
5. Only one person can use a microscope at any one time.
6. Gloves must be worn. Gloves should be sanitized with 70% Ethanol periodically throughout the imaging session.
7. It is necessary for users to wear a face covering mask during imaging sessions. This is to prevent any potential transmission onto the area of the microscope beneath the eye pieces.
8. Clean down working bench area with paper tissue and 70% ethanol.

Cleaning and sanitising before use of the microscope

1. Cleaning materials are provided in the room (70% ethanol, paper tissue, lens cleaning solution, lens paper, cling film, rubber bands). If spray bottles are used for ethanol dispensing, these are to be sprayed onto cloths or paper towels and not directly on the equipment or surfaces.
2. Start by taking off the plastic cover of the microscope and set it aside.
3. Clean with 70% ethanol the ON/OFF buttons/switches of the CPU, monitor and microscope light source.
4. Remove the eyecups off the eye pieces, if present. Clean microscope components with 70% ethanol: stage and stage clip, stage controls, focusing knobs, light dimmer, condenser diaphragm, beamsplitter lever for oculars/camera, objective ring and finally eye pieces (ocular lenses). Eye piece sanitising should be thorough as this is one of the main concerns of infection. ONLY USE lens paper when cleaning the eye pieces, and objective lenses.

5. If you're using the polarising microscope also clean with 70% ethanol the polariser control knob, the rotatable analyser, and the outer ring of the polariser lens before laying on the condenser. ONLY clean the lens with lens cleaning solution and lens paper, if needed.
6. Clean area beneath the eye pieces thoroughly (also a main concern of infection) with 70% ethanol.
7. Cover eyepieces with cling film, making sure it covers down to the eyepieces arms. Use rubber bands to secure cling film to eyepieces (Image 1 & 2).
8. Wipe keyboard, mouse, and any component area that you will be in contact with (70% ethanol).
9. Wrap keyboard and mouse with cling film (Image 3).
10. Use microscope as per standard SOP for the light microscopes.
11. Keep gloves and face mask at all times, particularly when viewing through the eye pieces. Sanitise regularly.
12. Reduce use of door knobs and light switches. If they are in contact with, wipe them with 70% ethanol.
13. Maintain good respiratory hygiene, good cough/sneeze etiquette and hand hygiene at all times. Sanitise after touching face and eyes.

Cleaning and sanitising after use of the microscope

1. Take sample off the stage, turn off microscope light source and leave computer on standby (if you're the last user of the day, turn everything off as trained).
2. Remove cling film off keyboard and, mouse, and securely dispose in the proper container.
3. Remove rubber bands and cling film off the eye pieces, and securely dispose of these in the proper container.
4. Wipe keyboard, mouse, CPU and monitor ON/OFF buttons, and any component area that you were in contact with (70% ethanol).
5. Clean eyepieces and area beneath these thoroughly with 70% ethanol and lens cleaning solution.
6. Wipe with 70% ethanol the polariser control knob, the rotatable analyser, and the outer ring of the polariser lens before putting it back in its box (if used).
7. Clean microscope components with 70% ethanol: objective ring, beamsplitter lever for oculars/camera, condenser diaphragm, light dimmer, stage control, stage and stage clip (if present), transmitted light knobs at the top of the housing, and stage door of microscope housing.
8. Immersion oil bottles and lens cleaning solution bottle should also be carefully wiped with 70% ethanol if used during imaging.

9. Cover microscope with its plastic case.
10. Put back all the cleaning material in its original place.
11. Retrieve personal items and exit the room. PPE equipment can be removed now.

Notes

- Bleach or isopropanol is not recommended for microscope parts, optics, certain plastics, etc. These can be used on hard surfaces.
- Users and PIs should be aware that this facility cannot immediately go back to the previous operational levels and productivity. A change in the working culture for these facilities will need to be recognised and incorporated into ongoing experimental design and planning.

Image 1 & 2: Eye piece and ocular arm cling film wrap example.



Image 3: Keyboard and mouse cling film wrap example.



I have thoroughly read and understood **SOP No: 4-LM** (SOP for booking, use and cleaning of light microscope in the Human Biology Building during the COVID-19 Pandemic) revised in June 2020 and agree to observe these safety and cleaning guidelines while in the microscopy facility:

Signed:

Date:

Principal Investigator/Academic Supervisor

Signed:

Date:

Researcher to whom access is being granted