

31 January 2013

Rules and Regulations for the usage of Zeiss LSM 710 Confocal Microscopy System

Booking (Department of Biochemistry Users)

1. Operating hours: Monday to Sunday, 8.30 am to 8.30 pm.
2. Priority booking on Fridays, 8.30 am to 5.30 pm, is granted to other NUHS users.
3. Minimum booking per slot is 30 minutes. Maximum booking per slot is 3 hours, except for long time-lapse microscopy. For booking of >3 hours or after 8.30 pm, please inform A/P Tang Bor Luen and Dr. Yap Lai Lai, at least 3 days prior to use.
4. Please book online prior to use through the Microsoft Outlook online calendar named **“Yap Lai Lai – LSM 710 Confocal Microscope”** and indicate the following in the booking calendar:
Full name / lab / contact no. / trained by Zeiss or others (name)
5. Access to **“Yap Lai Lai – LSM 710 Confocal Microscope”** calendar is by invitation only, and authorized to trained users only.
6. Please delete your online booking if you wish to cancel your slot.
7. Booking for the next month starts on the last week of the current month.

Booking (Other NUHS Users)

1. Operating hours: Fridays, 8.30 am to 5.30 pm.
2. Maximum booking per slot is 3 hours, except for long time-lapse microscopy. Exceptions may be granted for booking of >3 hours or after 5.30 pm, on a case-by-case basis.
3. Please fill in the booking form (http://medicine.nus.edu.sg/bch/pdf/department_of_biochemistry_core_facilities_booking_form.docx) and e-mail it to Dr. Yap Lai Lai at least 3 days prior to use.

Use of machine

1. Only primary-trained and secondary-trained users are allowed to use the microscope.
 - a. Definition of primary-trained users: those who are trained by Zeiss and hold the Zeiss certificate.
 - b. Definition of secondary-trained users: those who are trained by a Zeiss-certificate holder. Adequate training should be provided by a primary-trained user from the same lab. Trainees can only start using the microscope independently when the trainer decides that they are competent to safely operate the machine. Primary-trained user should email Dr. Yap Lai Lai with the name of secondary-trained user to request for access to the booking calendar.
2. Please log in your details in the keys logbook upon collection of the microscope room key from MD7 Level 1. Please do not leave the key inside the microscope room unattended when you leave the room temporarily, nor take the key out of MD7. For a prolonged period of absence (e.g. lunch), please lock the door and either return the key to Level 1 or leave your phone

number on the door where you can be contactable.

3. Please log in your Start time in the user logbook in the microscope room.
4. Please do not use gloves in the “No Gloves” areas, i.e. the computer, keyboard, mouse etc.
5. Procedures for switching on the system:
 - a. Switch on sequentially from switches #2 to #9.
 - b. Select Biochem User in the computer screen.
 - c. Click on the software, ZEN 2010. Choose “Start System” for new image acquisition.
- d. For live cell imaging, open the valve of the CO₂ tank gently (anti-clockwise) and check the CO₂ level remaining in the tank (right gauge). Do not adjust the regulator knob connected to the CO₂ tank which is pre-set to 1 bar (left gauge), nor adjust the Open/Close knob. To switch on the heating insert, heating chamber unit and CO₂, go to “Ocular” and “Incubation” in the ZEN 2010, click to check “Channel 1” (heating insert) and “Channel 2” (heating chamber unit) under “Temperature”, and “CO₂” under “Atmosphere”. The default settings are 37°C, 37°C and 5%, respectively. Alternatively, you may use the TFT touchscreen by choosing “Microscope” and “Incubation” to switch on the heating for heating insert (labeled “H Insert P”) and heating chamber unit (labeled “H Unit XL”), and release of CO₂ (labeled “CO₂ Small V”). Please ensure that the level of sterile water in the bottle connected to the CO₂ tubing in the chamber is between the minimum and maximum level. Please ignore this step 5.d. if you are not doing live cell imaging.
6. Please lower the objectives (click “Load Position” on the TFT touchscreen) before removing the slide to prevent scratching of lens.
7. Please clean the immersion oil off the 40x/63x/100x objectives using 100% ethanol and lens paper immediately before switching to another objective to prevent dripping of oil and soiling the sides of the objectives.
8. Please do not adjust any buttons or knobs other than those taught during the training.
9. Please save all your data in D drive only. Any files saved on the desktop or other drives will be removed without notice. Please note that regular clearing up of the disk space will also be performed at the end of every month, and any data more than 3 months old will be deleted without further notice.
10. Procedures for standby/shutdown:
 - a. Please select the 5x objective.
 - b. If you are doing live cell imaging, switch off the heating insert, heating chamber unit, and CO₂ by unchecking Channel 1, Channel 2 and CO₂ in ZEN 2010, or select “Off” using TFT touchscreen. Close the valve of the CO₂ tank gently (clockwise).
 - c. If the next user is using within the next 30 minutes, please do not turn any switches off.
 - d. If the next user is using within the next 30 minutes to 1 hour, please switch off #9 (X-Cite lamp) and #8 (idle-run switch) to idle for standby mode. The next user can switch #8 to run and switch on #9 when ready to use.
 - e. If the next user is using more than 1 hour later, please turn off all switches in reverse order from #9 (X-Cite lamp) to #2 (safety lock) for a complete shutdown. After switching off #7 (key on Ar-ML laser), please wait for the fan to stop (~10 min) before switching off the rest. To turn off #6 (computer), please shut down the PC.

- f. Please clean the immersion oil off the 40x/63x/100x objectives using 100% ethanol and lens paper.
11. Special instruction for X-Cite lamp: when it is switched on, leave it on for a minimum of 15 minutes before switching it off and when it is off, leave it off for a minimum of 15 minutes before switching it on.
12. Please log in the End time and CO₂ level (for live cell imaging) in the user logbook at the end of your usage. Please alert Dr. Yap Lai Lai when the CO₂ level drops to 20 bar (red mark on the right gauge of the regulator).
13. Please ensure that the microscope room is securely locked upon exit. Please return the microscope room key immediately to MD7 Level 1 and log in the return time in the keys logbook.

Charges

1. The usage of the microscope will be charged quarterly according to the following rates:

Users	Rate/hour
Department of Biochemistry Users	\$15.00
Other NUHS Users	\$20.00

2. For long-term time-lapse experiments, a package price of S\$5.00 per hour for a minimum booking and usage of 12 hours, are applicable for both Department of Biochemistry and other NUHS users.

No. of hours	Package Price
12 hrs	\$60.00
24 hrs	\$120.00
36 hrs	\$180.00
48 hrs	\$240.00
60 hrs	\$300.00
72 hrs	\$360.00

3. Training is compulsory for first-time users, and can be arranged upon request. Training charges may apply.
4. Please refer to Standard Operating Procedure for cost-sharing of LSM 710 Confocal Microscopy System (http://medicine.nus.edu.sg/bch/pdf/Costsharing_SOP_for_LSM_710_Confocal_Microscopy_System.pdf).

Contacts

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