EVOS M5000

Wide field fluorescence imaging In CSC Room 32

- Basics

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Basic instructions for the EVOS M5000 in Crocker 32.

The EVOS M5000

The EVOS M5000 is capable of imaging slides in brightfield, phase contrast, and/or epifluorescence. It can also do Z-stacks and projection as well as timed experiments. Unlike the EVOS Autocolor in HSC 54, it does not have a motorized stage, so the M5000 cannot do things like tiled images or plate imaging.

It is mainly being provided for people who need an easy way to check for fluorescence in their samples. Currently there is no entry on the Cell Imaging Resource Calendar for scheduling or charges. That may change in the future. Let us know if there are schedule conflicts and we can set up a calendar. (support.cellimaging@cores.utah.edu)

This Basics is going to be very brief because:

- There are some very good online manuals.
- A print version of the Quick Guide should be beside the microscope.

We will provide a few key points about the microscope, but please check out the manuals:

> Please note that there are features in the manuals that are not present on this system (e.g., RGB Transmitted).

Quick Guide:

https://assets.thermofisher.com/TFS-Assets/LSG/manuals/MAN0017765_EVOS_M5000_Imaging_System_QRC.pdf

Users manual:

https://assets.thermofisher.com/TFS-Assets/LSG/manuals/MAN0017563_EVOS_M5000_Imaging_System_UG.pdf

Turning the EVOS on:

The power switch is on the back to the right. Boot up takes almost 2 minutes and at points there will be a blank screen and it will look like nothing is happening. That is normal. (The little blue dots on the front of the machine will be lit.)

Mouse and Keyboard:

There should be a mouse and keyboard with the M5000. The mouse is required because this is not a touch screen like some other EVOS systems. While there is a pop-up on screen keyboard if needed. The external keyboard is convenient.

Sample Holders:

Our M5000 came with a double slide holder. However, the sample holders on the FV1000 fit. Please return them to the FV1000 after use. Let us know if you have need for other holders (support.cellimaging@cores.utah.edu)

Saving Data:

While the EVOS does have space for data storage, you will probably want to save directly to an external USB drive.

- If you save data to the internal drive and want to get it to an external drive: In the Review tab, you can select your data and Save it again. This will allow you to get it to the external drive.
- If you want to eject your external drive (so far, I have had no problem with just removing the drive after turning off the EVOS) you can select Save, then click on This PC, right click on your drive and select Eject.

Light Shield Box:

There is a light shield box that should be placed over the sample during fluorescent imaging. This will improve image quality as well as shielding you from UV exposure.

Focusing and Testing:

- Brightfield (especially): If the light is too bright, you won't be able to focus. The screen should be gray.
- The H&E sample (smooth muscle) from the FV1000 is a good test. It works best for brightfield, Cy5, TxRed and OK for GFP. The Pollen sample is good as well and fluoresces

to DAPI.

Z-Lock:

For the most part, leave the Z-Lock ON.

When the Z-Lock is on, moving in Z on one channel affects the others as well (like a normal microscope). When it is off, you can focus on one channel without affecting the focus on the others. This is helpful if you need channel to channel offsets, but can make it very confusing to use the microscope.

If there are channel to channel shifts that you don't want:

- Turn on the Z-Lock
- Apply the saved setting: "No Z Shift"
- As you focus, the Z-plane for each channel will appear below the channel. They might drift off by a tenth.

Color:

The M5000 uses as monochrome camera for all imaging. The manuals and videos suggest that it can do color by imaging with R, G, and B LEDs separately and merging into a color image. We haven't seen that on this. We are not yet sure if it is a firmware, license or hardware limitation.