Imaging Systems

Ultra-Lum Omega Imaging Systems (PSC 543, NSC 338) EtBr allowed
Ultra-Lum Omega Imaging Systems (Kell 405) No EtBr

Every time you use the any of the Imaging system, you MUST sign the logbook.
DO NOT use EtBr under any circumstances on the new UVP imaging sytem or the Kell Hall 405 Ultra-Lum system.
Clean up any mess you make including wiping off the light box with H2O and paper towels.
Do not cut bands on the light box. On top of the box is a plastic tray, place your gel on the tray and then place on top of the transilluminator.
Be sure to turn off power when you are done.
Do not store any images on the hard drive.

Contact: Sandy Hsieh (404) 413-5363; yhsieh@gsu.edu

Ultra-Lum Omega 10g

General information

1. The 305 nm transilluminator is fixed and can't be pulled out.
2. Coomassie gels. Remove the white tablet from one of the drawers under the system. On the right hand side of the transilluminator is a cord and plug. Plug into the white tablet and place on top of the transilluminator.
3. Filter selection. There is a laminated list of available stain in a drawer under the system. Locate your stain and then what filter you will need to use. Be sure to look at the filter column, NOT the epiluminescence column.

Imaging Box

1. Power on button is on the right.
2. Far left – Door interlock disabled. Punch this button so that you can have the transilluminator light on when you cut out a band. Since you are using filters instead of UV light, you should be safe.
3. Camera ready. Comes on when you turn the power switch on.
4. Epi Illumination buttons, with UV and also WL(white light) buttons. You shouldn't need any of these. Epi-Illumination is used when you require fluorescent excitation different than 300nm UV to reflect light off the sample. Usually the samples are opaque, ex. TLC plates.
5. Transillumator. When the power button is turned on, the Transillumator is off. After you turn it on, the default is 10. The #'s 1 (weakest) – 10 (strongest) are how bright the bulbs are. If you are going to cut a band out, you need to have this # as low as you can and still see the band. You use this button (up and down) as well as the Iris button (open and close) to get a clear image of your gel.
6. Zoom. Up and down.
7. Focus. Up and down.
8. Iris. Open and Close. This controls the camera aperture (exposure). You use this button (Open and close) as well as the Transilluminator button (up and down) to get a clear image of your gel.
4. Filter Selection. When the power button is turned on, the default is none. Select appropriate filter for whatever stain you are using. There is a laminated list of available stain in a drawer under the system. Locate your stain and then what filter you will need to use. Be sure to look at the filter column, NOT the epiluminescence column.

Agarose gels

1. Open darkroom door.
2. Place gel on UV box. Position the gel appropriately.
3. Close darkroom door completely and turn knob. The transilluminator will not work if the door isn't closed properly.
4. Turn power on light box (button on right).

5. Make appropriate adjustments.
    a. Turn Transilluminator on. Lower # to ~5.
    b. Set filter to whatever your stain is – see laminated list.
6. Go to computer. Open UltraQuant 6.0.
7. Select Camera button.
8. Select Preview. Select #1button to reset to default settings (200mm for preview and acquire). Check saturation warning button.
9. Make appropriate adjustments for your image.
    a. Zoom in and out to image size you want.
    b. Focus up or down as needed.
    c. Iris – open or close as needed to visualize your bands. Use both the Iris and the transilluminator #'s to set your gel image
    d. You should not see any red (saturated). If you see red, you are past dynamic range and can lose resolution.
    e. Adjust the Iris and transilluminator until you see red and then back off until the red goes away.
    f. You can also adjust the exposure on the Capure Dialog window. Change the exposure by either clicking on the MM; ss; mm, the #'s will be highlighted and just type in the # you want; use the up or down arrows; use the slide bar below the Exp Pvw or Exp Acq. Notice that there is a lock on the left side of the Exp Pvw and Exp Acq. With this lock closed, any change to Exp Pvw or Exp Acq will change the other.
10. Stop preview.
11. Snap; turn power off light box.
12. There are several things you can do now to improve brightness and/or contrast.
    a. Enhance/Display range. Move bar on right to left with cursor.
    b. Button. Image Enhancement – move brightness, contrast and gamma slides.
    c. Button. Optimize Image. Automatically optimizes.
    d. Button. Reset Image – goes back to original.
13. Clitch in software to print. Save image. Close image. Reopen image – can now print. Print – use either print button or file/print. Do not use the print button on the printer. Select # of copies. Setup button will change usual print parameters (portrait vs. landscape). You can press Feed button on printer to get extra clearance before tearing off.
14. When finished:
    a. Close out all boxes
    b. Close out your image (save changes/no). Do not save ANY images on the hard drive.
15. Remove gel

*Turn power off light box!!!!!!

1D-Gels – Label, Quantitate. Consult with core personnel for instructions.

If you don't see an image or it is faint, be sure you adjust the following:

1. Transilluminator. Increase #'s.
2. Iris. Increase aperature on camera.
3. Exposure time. Increase exposure time - when you open the window to preview, the default (#1) is 200. Increase this #.

If you try to use Display Range (UVP) to see your image, the image maynot print. Use the above three to get your image set. You can still use Display Range, but don't use it exclusively.

Saving image to use in Adobe Photoshop.

1. Edit/Convert to/select either Gray Scale 8 or Gray Scale 16.
2. File/Save as/TIF.

Images to Adobe Photoshop

1. Edit/ Convert to/ Select Gray scale 8 or Gray Scale 16
2. File/ Save as/ Select TIF or JPEG/name file/Save