

GeneGnome

Chemiluminescence Capture and Analysis System

Quick Guide -Image Capture

Image capture and enhancement is carried out within **GeneSnap** (if the program does not open automatically, simply double-click on the *GeneSnap* desktop icon. You will now see the *GeneSnap* User box.



1) Log in

Type into the space your name and click the *OK* button. This is now your configuration and any changes you make to the way you use or set-up the program will be stored as defaults under your name. Each user can enter a name or title for their own individual user preferences so that whenever you start *GeneGnome* and enter a particular name at the log-in stage the system adapts for that user's preferred settings. In future you only need to select your name from the drop down list.

GeneSnap will now fully open and an image acquisition pane will appear.



If the Acquisition pane is not visible, click on the camera icon at the top of the screen.



Click on the 'Open Drawer' icon. The sample drawer will open and the Acquisition pane will alter to indicate that measurements are not possible at this time.

Place your sample centrally on the sample tray and gently push the door closed.

2) Load sample in drawer

GeneGnome is a totally dedicated chemiluminescence imaging system.

The highly sensitive 16 bit camera is fully optimised to collect the most sensitive images in the shortest times.

The camera has been pre-focused so that samples placed anywhere within the 15cm x 15cm tray are imaged sharply.

GeneGnome has sophisticated optics which allow maximum light into the camera over the shortest period of time.

Consequently, once your sample is placed in the drawer, the only user-determined factor is the length of exposure time and the number of images required.

Select an exposure time using the arrows within the Acquisition pane. The arrows on the right allow you to change the units of the exposure time. In the first instance we suggest doubling the usual time exposed to film.

3) Select exposure time



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Then ensure 'No Light' is selected.



Now Either:

1) Click on the 'Image Capture' button in the Acquisition pane.

GeneSnap will display your captured image in a pane.

Or

2) Select the 'Series Capture' button from the Acquisition pane.

Select the required number of frames and whether or not these should be added.

GeneSnap will display your series of images - simply select that which is the most appropriate.

Imaging colorimetric markers

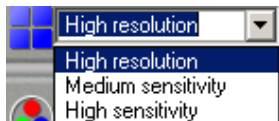
Colorimetric molecular weight markers can also be imaged by turning on the white lights.



In GeneSnap a composite image of the chemiluminescent bands and molecular weight markers image can be created. First ensure that both images are currently open in GeneSnap. Then select 'Create new composite image' from the File menu. Select the images you want to superimpose from the 'colour' drop-down list boxes. Check 'Create monochrome image' if you want the composite image to be monochrome rather than colour. Check 'Balance maximum values in each colour pane' to weight the contributions of each image according to the maximum values in each image. Press Ok. The image can now be exported as a TIF file and analysed in GeneTools; however, the results of the analysis do not satisfy the conditions for Good Laboratory Practice.

Binning

GeneGnome has a resolution of 0.3 million pixels. Binning or merging pixels will increase the sensitivity of the camera to low light levels. Consequently, chemiluminescent imaging can be achieved with much shorter exposure times. GeneSnap offers 2 levels of binning - Medium and High Sensitivity.



Each level of binning will result in a corresponding decrease in resolution and this should be considered when selecting which level to use.

Saturation detection

The GeneGnome has a very wide dynamic range which means that higher levels of light can be detected by the camera before it reaches saturation point.

To check for saturation, click on the Histogram icon.



A graph will be displayed indicating which grey shades have been detected by the camera, from 0 - 65,535. Providing that the image is within this range, it is within the linear range of the camera, and quantification may be performed with confidence.

4) Imaging colorimetric markers

5) Binning

6) Saturation detection

Printing - When an image is 'grabbed' the PRINT icon is available. Click this to send a copy of the image to any attached printer for a hard copy output.



Saving the image - You have the choice of either selecting FILE/SAVE AS or FILE/EXPORT. In the first case the image can be saved in the GeneSnap secure SGD format for true GLP. With the second option, the image can be saved in a range of formats including TIF, BMP, GIF, PCX, TGA, WPG, and JPEG. Images can then be exported to other software packages.

For Annotation and set-up, image control, camera set-up, configuration, brightness, contrast and gamma control - please refer to the full manual.

7) Print image

8) Save image



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