

2. Measure distance migrated for 2-log size standards.

- Download Image J software and lambda gel tif file from course web site.
- **To open the tiff file of the lambda digests**, go to **Open** command under the *File* menu of ImageJ. Note that the top of the drop down menu is the folder in which you are presently in with the program
- You want to compare the relative migration distance of your known samples (2-log) with the DNA fragments generated by digestion of lambda DNA with EcoRI, HindIII and PstI. To measure the migration distance, you can simply measure the number of pixels from the bottom of the well (**use top of image as your starting point in this image**) to each band.
- Under *Analyze* menu select **Set Measurements** and choose *Perimeter*
- Select the **line tool** on the top toolbox and use this tool to draw a line from the top of the image to the DNA fragment of interest. Decide whether is is best to measure to the leading edge, trailing edge, or middle of each band. Be sure to record exactly how the measurement was done.
- **After drawing first line**, under *Analyze*, pull down **Set Scale**. The distance in pixels will be listed. To measure in pixels, type in the pixel length in the *Known Distance* box and pixel in the *Unit of Length Box* (see picture below). Check global to apply settings to all subsequent measurements.
- Draw line to next band
- To view the measurement, select **Measure** under the *Analyze* menu, and then select **Show Measurements** under the *Analyze* menu.
- Repeat this process for all the bands that you are going to analyze on your gel.
- This data can be exported to Excel (below) or simply recorded and manually entered into a table (below) and plotted out on semi-log paper.

To export the measurements as a tab-delimited text file, select *File>Save As>Measurements* from the ImageJ menu bar or *File>Save As* from the "Results" window menu bar. Copy the measurements to the clipboard by selecting *Edit>Copy All* from the "Results" window menu bar. You can also save measurements by right-clicking in the Results window and selecting *Save As* or *Copy All* from the popup menu.

