Biology 211
Lab 6
Check DNA Quality and Quantity

Objectives

- To look at the DNA that was made, and determine if there is enough to PCR.
- To determine the approximate size of our genomic insert into the plasmid.

Before Lab

- Have a final copy of the procedure for pouring and running a gel for your lab notebook.
- Bring a camera so that you can record your gel for posterity.

In Lab

- Pour and run the gel to check your DNA compared to a size standard.
    - Note on procedures:
        - Add loading dye to your samples before loading the gel, add 2ul loading dye to 5ul plasmid DNA.
        - Mix on parafilm.
- Compare 15ul 1kB ladder to 5ul DNA with 2ul Loading dye. If the DNA is not at least as dark as the most comparable 1kB ladder band, this means that the quantity of DNA is low. You will need to redo your DNA prep.

After lab:

- Include an analysis of your DNA size compared to the DNA ladder that you used.
    - How to calculate your DNA size, an example:
        - Below is an example of a completed gel electrophoresis. The molecular mass ruler (MMR) is a sample of DNA fragments of known length (measured in base pairs). The next step would be to calculate the exact number of base pairs for the DNA fragments in all of your samples, based on the lengths of the molecular mass ruler (MMR). On the gel below, write the band sizes next to the bands for the molecular mass ruler. Here are the band sizes (measured in base pairs): 5000, 2000, 850, 400, 100. Now, write the approximate band size on top of each band **<u>in column 1 only</u>**. You will need to look up the sizes of the mass ruler that you actually used.