**Bio111 Week 12**

Before you come to lab

1) You will be working with Excel to analyze your IDH data. Think about why we did one well with only buffer. What should your X-axis be (independent variable) and what should your Y-axis be (dependent variable)? What will you do with your triplicate values? How can you visually represent the variation in your data for each time point?

2) Organize all your notes from the 13 weeks of the evolution experiment.

3) Answer each of these four questions in two sentences or less.

A) Does the absorbance of the complete reaction go up or down over time? Explain why. What fold difference did you see in absorption with NADP+ vs. NADPH? (homeostasis)

B) When you graph your experimental data, which is more important – the end value or the slope of the line? Explain your answer. (homeostasis)

C) How can you calculate the concentration of any reagent (ingredient) in each well of the plate? (homeostasis)

D) What week did you have the first signs of antibiotic resistance from your experiments? (evolution)

**Week 12 (Mo-vember 10th)**

Homeostasis Lab

1) The main goal today is to analyze the data from your two experiments. You will need to enter the data into Excel, calculate the average value for each time point and then generate a best fit line. You want to get the equation that fits this line so you can determine the slope of the line. It would be good for you to have error bars show +/- standard error of the mean (SEM).

2) For the experiment that varied the concentration of the enzyme, generate an additional graph where the independent variable is enzyme concentration (X-axis) and the dependent variable is the rate of the reaction (Y-axis).

3) Before you leave lab, each group needs to come up with one metabolite you think will enhance IDH activity and one metabolite you think will inhibit IDH activity. Consider your choices in light of homeostasis that you are reading about in Chapter 21. Record your metabolite on the sheet of paper at the front of the lab.

Evolution In Lab

4) Analyze your results from your final evolution experiment. Document your results by measuring the radius of the rings around the disks. Compare today’s results to the measurements you made early in the semester (see week #2 results). You can also take photos if you think they would be informative in your final oral report on this project.

Friendly advice: You have been recording a lot of information for this experiment. Your methodology is complex and you will want to present this in an easy to understand format. Furthermore, you found the mode of action for all the antibiotics so think about what may be the genetic cause for your antibiotic resistance. Can you use this information to help you understand the results regarding the other antibiotics?