

Office Hours: MTu 2-4

Meeting Times: Lab Lecture M 6:10-7
 Lab Meeting Fri 1:10-5

Overview

This is the companion lab to Chem 391/392. The goal of this course is not to teach new concepts in biochemistry, but rather to give you exposure to the techniques involved in creating the information that is presented in the lecture courses. Biochemistry is as broad a field as there is within chemistry, which means any selection of experiments necessarily omits other equally valid options. Consider this a very brief introduction to biochemical methods.

Reading

You may find it useful to refer to a biochemistry text book from time to time. I will also provide references where information is not available from a textbook.

Required Work and Evaluation

Evaluation will be based on participation in the laboratory experiments, the quality of the written reports and notebooks, and a final oral exam. The writing in this course will be a la thesis. Early materials will be edited and included in a final document. The number of edits you make are at your discretion, and even if I don't recommend it, I welcome a re-write on any material.

Collaboration

Since you are collecting the data as a group, it is only natural that you will work as groups in analyzing the data. Take care that throughout each experiment, every member of the group has an opportunity to participate fully in each activity. When the time comes to prepare the written report, I expect that all text and figures will be **prepared independently** by the individual whose name appears on the report.

The Project

This course is more of an independent study than a teaching lab. You will be working with a partner on the cloning, purification and characterization of a novel lipase and virulence factor from *M. tuberculosis*, known as **LipY**. Clara Herrera worked on this protein, which we would like to be able to crystallize and do a structure solution as part of a collaboration I am in with Professor Kimberly Beatty's lab at OHSU. The details of the project will be presented in the course introduction, but a schedule for work follows. Note that there are heavy weeks and light weeks. In heavy weeks, you may need to come in for an extra lab visit or stay a little late. In light weeks, I pay you back for that.

Laboratory Schedule

Week of	Experiment	Writing due
1/25	Modeling, primer design	
2/1	PCR, agarose gel, Gibson rxn, transform	
2/8	Minipreps, submit for sequencing	Methods Wk 1, Gel Figure
2/15	Transformation of expression strain	
2/22	Cell growth, harvest, buffer prep	Cloning report
2/29	Lysis, purification	
3/7	Protein concentration, analysis	
3/14	Purification finishes	Introduction
3/21	<i>Break</i>	
3/28	OHSU run	Purification report
4/4	Kinetics #1	
4/11	Kinetics #2	
4/18	Independent experiment #1	Kinetics report
4/25	Independent experiment #2	
5/2	Reading Week	Final Report Due
5/9	Oral exam on Final Report	