

Lab 6: The Neurogenic Crustacean Heart

Marguerite Butler

2023-09-30

Table of contents

| | |
|----------------------|----------|
| Before Lab | 1 |
| In Lab: | 2 |
| After Lab: | 3 |

Before Lab

This will be our first invertebrate lab. We will be studying the control of the neurogenic heart of crustaceans using the lobster as a model.

i Prepare for lab by:

- Read the lab manual for this week s experiment [**Lab 6**] exploring the physiology of the toad heart using ECG and a force transducer.
- Write the [**Prelab**] in your lab notebook.
 - For the **Intro**, focus on identifying the physiological mechanisms (outline them), and end with a paragraph of hypotheses/expectations (like the work-sheet).
 - Think about **strong hypotheses!** *Strong hypotheses lead to excellent reports.*
 - **Methods:** subjects, experimental methods and analyses (how you will compare to address the hypotheses – *you should start thinking about how you will plot the data for the results to make these answers pop*).
- Do prelab Quiz on Laulima (open 24 hrs before lab).
- Please check out the [**powerpoint notes**] and the review paper on the [**crustacean cardiac ganglion**] by our very own Dr. Ian Cooke who was an emeritus faculty from the Zoology Department and PBRC, a pioneer in invertebrate neurophysiology!

In Lab:

- *Plan to Work quickly! You will have 30 min (and very lucky if you have an hour)* once you open the carapace.
- Keep your animal chilled (they are Maine lobsters!) and irrigated with ice-cold Lobster ringers at all times.
- Lab 6 manual [\[pdf\]](#) . Record data in your lab notebook.
- You should have plenty of time to complete the data collection and your figures during lab.
- This will be a Group Lab. Begin planning with your partners as you work.
- Start an outline with your lab partners and start outlining your discussion points, and the rest of the report. Use your time wisely to brainstorm as you work.
- Lobster external anatomy [\[jpg\]](#)
- Lobster internal anatomy [\[jpg\]](#)

Lobster

Dorsal View



Internal Anatomy



After Lab:

- Group lab report due next week. See the guidance at the end of the [[Lobster Heart lab manual](#)]. You may also want to look over the guidance at the end of the [[Toad Heart Lab](#)].
- Always follow the content guidelines: [[grading guidelines](#)] [[old style](#)]
- It is a good idea to divide up the work of writing the lab **by experiment**. That way, *each person writes a portion of the intro, methods, results, and discussion for their hypothesis*.
- Work out your timeline with your lab partners during lab (and plan a face-to-face meet up [hey! you can do your lab EC]) *so that everyone has a chance to comment and edit* before the lab is submitted.