

Lab Report 2 Guidelines

A lab report is an opportunity for you to consider what question(s) you were trying to address, and synthesize the experiments and results into a big picture.

Basics

- Hard copies of the lab reports are due at the **beginning** of the lab period on the day they are due. Late reports will be deducted 10 points, but no reports will be accepted more than 1 week late. This assignment is worth **20%** of your lab grade.
- Text should be typed, one-and-half space, and **up to 5 pages**, excluding figures (graphs), charts/tables, and references. Fonts must be at least 11 point (12 is better). Be concise. 5 points will be deducted for each page over the page limit.
- Include page numbers.
- You are allowed and encouraged to discuss the results of the lab with other students, your partner, and your instructor. However, each student must turn in their own original work, written in their own words. **DO NOT SHARE YOUR WRITTEN WORK WITH OTHERS.**
- Report should be in paragraph form (even Methods section), in past tense as appropriate, and include proper citations. You need a source even if you are paraphrasing (avoid direct quotes as much as possible).
- Points will be taken off for multiple grammar and spelling mistakes, more so if the grammar is of such quality that your intentions are unclear.
- Each section sets up the reader for what to expect to see in the following section.

Lab Report Sections (use headings, except for “Title”, in your report)

Title (3 pts)

- Should be representative and specific of the work done
- Do NOT put on a separate page

Introduction (14 pts) (suggested length = ~0.75 – 1.25 pages)

- Start general by (2 – 3 paragraphs) describing the background relevant to the experiment: **fission yeast, DNA damage, survival assays**
- The **last paragraph** should describe the specific question(s) that you were trying to address (the purpose), and an overview (few sentences) of how you tried to pursue the answer; save any in-depth explanation of methods used for the Methods section.
- Use in-text citations as appropriate.

Methods (20 pts) (suggested length = ~1.5 – 2 pages)

- What techniques did you use to address the experimental question? Using a paragraph format, briefly summarize (in past tense) the main principles/steps of the procedure(s) used, highlighting the main points of each protocol.
- Organize this section by a topic, not by order performed in lab. **SUBHEADINGS** are good things.

- Demonstrate that you understand the protocols performed and how the experiment was set up. Be sure to describe the different samples/conditions tested, e.g., why 12 plates? Why three strains?
- Given your explanation, the reader should know what to expect in the Results section, but do NOT include results in this section.
- You should cite the relevant protocols within this text of this section.
- It is not necessary (or desirable) to list the materials used or to write down every step of the protocol. If you used the amount indicated in the protocol, then you do not need to report that number in the lab report.
- You should include the numbers that you obtained or calculated in order to complete the protocol, such as:
 - **A chart with cell counts, cell averages, cell/mL, yeast and media volumes**
- Indicate changes made to the protocol by your instructor or by your group

Results (25 pts) (suggested length of text = ~0.5 page)

- Must contain and start with **TEXT** presenting each of your results, but do not repeat numbers that are already present in a table/figure. A minimum of 5 points will be deducted for any report lacking text presenting each result.
- Present the data by referring to Figures and Tables by number in text, but save the analysis and conclusions until the Discussion section.
- It is preferable to attach them to the end of the report.
- Include tables or figures that you generated during or as a result of the lab.
- Tables should be labeled as tables, and anything else as a figure.
- Figures and tables should also include a **figure legend** or **table heading**. You should not describe the results of your experiment in the figure legend; this is what the textual portion of the results section should contain.
- Figures and Table to include:
 1. **Table with colony counts from plates**
 2. **Table with your group's percent survival rates**
 3. **Figure with your section's data and graph (non-log scale)**
 4. **Figure with Biol22 F09 data and graph (non-log scale)**

Discussion (28 pts) (suggested length of text = ~1 page)

- Organize this section by a topic, not chronological order
- For each topic, briefly describe what you were testing and how you would interpret the possible outcomes (for example, if we saw, then the strain must...).
- What did your results tell you? Do not make conclusions that are not supported by data and be sure to fully explain any results seen. Consider if the results were expected; discuss why or why not.
- You should (minimally) cover the following topics:
 - Quality of your group's data. Improvements?
 - Compare and contrast your section results to the entire Biol 22 class results
 - What conclusions can you make about JBJ? How reach this conclusion?
 - Did Chk1 get phosphorylated in response to UV? How would you know that?

- If something did not work, you should give a possible explanation and what could be done in the future to fix or avoid the issue. You will not lose points for an experimental failure if you provide a plausible possible explanation.
- In the last paragraph/sentences, summarize the experiments and conclusions.

References (5 pts) (should have had **in-text** citations as well)

- Do not put on a separate page.
- Cite lab protocols and relevant sources used- author, date, title, publication (if applicable).
- For example: Miller, J. 2009. Biol 22 Lab Protocol # (title).
- In text citations should indicate specifically where information was obtained- author, year and source.
- If you include page numbers, they must refer to ones on the original protocols (not your notebook!)

The remaining 5 points will come from a number of factors including overall quality, writing style, grammar, spelling, organization and clarity.

EXTRA CREDIT

Up to 3 points extra credit on Lab Report 2 if you use an approved literature paper, such as Callegari and Kelly 2007, to enhance your lab report. You must receive instructor approval if you want to use a different paper.