

Cytoskeleton Report Guidelines

Value: /100 = 10% of final grade

Due date: November 20, 2024

These guidelines are meant to provide more specific information related to this assignment. Be certain to utilize the Scientific Writing Guidelines & the skills taught in your tutorial in order to guide general aspects of formatting and content inclusion.

Title (1 mark)

Your title must be included at the beginning of your assignment. Please include your name and lab section below your title. The title of your report needs to be complete and provide a good summary of what was investigated. The title of a scientific report or article is written similar to a sentence. The aim is to make it informative, but also as brief as possible while doing so.

Abstract (200 words; 6 marks)

- introductory sentence: 1 mark
- inclusion of methodology: 2 marks
- specific results obtained: 2 marks
- clearly stated conclusions: 1 mark

Introduction (500 words; 18 marks)

- introductory paragraph introducing general purpose of report and why of interest (3 marks)
- general information as to the structure and functions of microtubules and microfilaments (4 marks)
- detailed explanation of the role of microtubules in flagellar structure (4 marks)
- detailed explanation of the roles of microtubules and microfilaments in phagocytosis (4 marks)
- concluding paragraph which summarizes your **research** hypothesis and what methodology is employed to test this (3 marks)

Methods (no word limit; 10 marks)

- use the provided procedures from your lab manual in order to prepare this section.
- you **must cite and provide a reference to the procedure** used. If no citations are included, your work will be returned and you will receive late marks until it is resubmitted.

Results (no word limit; 32 marks)

- NOTE: you will be using the class data posted on Nexus for this!
- text must be descriptive and summarize the results shown in your tables/figures (see your Writing Tutorial!). You will receive 16 marks in total for the quality of the content included in your writing. For each figure/table, you will receive up to 2 marks for the description of the experiment/analysis depicted and 2 marks for the description of the results shown.
- Flagella assay:
 - include a figure which shows the alteration in flagellar length which allows the comparison of all treatments over the length of the experiment (4 marks)

- Phagocytosis assays:
 - include a figure which shows the alteration in the number of phagocytic vesicles over the duration of the experiment, with all treatments on a single graph (4 marks)
 - prepare a table which shows the mean and standard deviation for the rate of phagocytosis. Note: if you have a variable rate, use only the linear region where you see a steady increase in the number of vacuoles. (4 marks)
 - prepare a table which includes the qualitative observations made during the experiment. Note: you will need to determine how to most effectively present this information! (4 marks)

Discussion (500 words; 18 marks)

- Interpret your results and discuss their validity. (2 x 6 marks = 12 total) For each experiment:
 - Summarize your findings and state what was demonstrated as to the process being investigated.
 - Does the literature support or disagree with your results? Include a detailed discussion, not just yes or no.
- Discuss potential errors that may have impacted the results you obtained. Try to include biological and/or experimental design reason(s), rather than just human error. (2 marks)
- Include future directions: a further experiment adjacent to this topic that could be performed using these techniques, or a means of testing the same hypothesis with a different technique (2 mark)
- Include a concluding paragraph which summarizes your conclusions and their importance (2 marks)

Writing Style & Formatting (7 marks)

- Spelling & grammar (2 marks)
- Paragraph structure (2 marks)
- Overall quality of scientific writing style (2 marks)
- Proper formatting of sections & headings (1 mark)

References & Academic Integrity (8 marks)

Be certain to follow **all** guidelines laid out for you in the course outline, lab manual, and tutorials you have been provided with. Failure to do so will result in the loss of marks or referral to the Departmental Review Committee, dependent upon the severity of the infraction(s). Your reference section should follow your discussion.

- Procedures are properly referenced (2 marks)
- At least 4 sources used and properly referenced (4 marks), one of which can be the lab manual. You may use more if you wish, but a maximum of 4 marks will be awarded.
- 2 mark for utilizing proper citation marks within your text and ensuring they are properly applied.