PEPSIN LAB Write-up instructions

Title (1 point)

Does your title help reader understand topic and purpose of lab? (Do not just call this “Enzyme Lab” or “Pepsin Lab”)

Abstract (2 points)

Although this section is placed first in the report, it should be written last. It is a VERY brief overview of the experiment’s purpose, hypothesis, and findings.

Your abstract should include:

-the purpose

-your hypothesis

-whether the findings supported or refuted your hypothesis (or, it’s also okay to say that your findings were too inclusive to judge…)

Introduction (6 points)

Your introduction should provide background on:

-Enzymes

* What is an enzyme?
* Why are enzymes so important in living organisms?
* What enzyme is used in this lab, and what is its substrate?

-Your experiment

* What is your variable?
* What is your purpose question?
* What is your hypothesis, and the corresponding rationale?

Materials and Methods(8 points)

You need to have a detailed description of the exact procedure that you designed. Be very specific here, and please list your steps in numbered forms. This should be more detailed than for other labs, since this procedure is self-designed. Be sure to identify your controls – and whether they are positive or negative controls.

Results (9 points)

* Do you include your data, presented **both** in a table and as a graph?
* Do you also include a few statements that summarize major trends observed? (no analysis here – just description)

Discussion, including sources of error (20 points)

* Do you state whether or not your hypothesis was supported? (Note that “proven” is not an acceptable word!!) Inconclusive data is also okay – do not exaggerate the clarity of your findings! (1 point)
* Do you support your statements with specific data? (Use your data as evidence!) (3 points)
* Do you provide possible BIOCHEMICAL explanations as to why you observed the trends you did? Do you reveal your knowledge of biochemistry, tertiary structure, hydrogen bonding, enzyme structure, etc. though these explanations? (5 points)
* Do you identify specific data abnormalities, and then provide and SPECIFICALLY explain at least three possible sources of error to explain these abnormalities? Do you incorporate a discussion of both sample size and confounding factors? Use a full paragraph for each source of error. (6 pts)
* Do you briefly comment upon the three other factors (in other words, besides the factor you tested) that have an effect on the rate of an enzyme-catalyzed reaction? Do you briefly explain why these factors affect the reaction? This information will come from the presentations in class. (3 points)
* Do you include at least two specific questions that you would be interested to research, as an extension of what you have already researched in class? (assume unlimited equipment and supplies) (2 points)

**Overall report** -- Clarity, detail, focus, organization, etc. Also, at least **two original and informative diagrams** must be added into your report. (4 points)

TOTAL POSSIBLE = 50 POINTS

**Pepsin Lab Report Scoresheet**

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| --- | --- | --- | --- |
| **Category** | **Description** | **Points Possible** | **Points Received** |
| **Title (1)** | Does your title help reader understand topic and purpose of lab? | 1 |  |
| **Abstract (2)** | Your abstract should include: the purpose, your hypothesis, whether the findings supported or refuted your hypothesis | 2 |  |
| **Intro (6)** | Your introduction should provide background on enzymes and your experiment | 6 |  |
| **Materials and Methods (8)** | You need to have a detailed description of the exact procedure that you designed. List your steps in numbered forms. Identify your controls – and whether they are positive or negative controls.  | 8 |  |
| **Results (9)** | Include your data (table and graph); Include a few statements that summarize major trends observed; No analysis, just descriptions. | 9 |  |
| **Discussion (20)** | Do you state whether or not your hypothesis was supported? (Note that “proven” is not an acceptable word!!) | 1 |  |
| Do you support your statements with specific data (including the purpose of the control groups)?  | 3 |  |
| Do you provide possible BIOCHEMICAL explanations as to why you observed the trends you did? Do you reveal your knowledge of biochemistry, tertiary structure, hydrogen bonding, enzyme structure, etc. though these explanations? | 5 |  |
| Do you identify specific data abnormalities, and then provide and SPECIFICALLY explain at least three possible sources of error to explain these abnormalities? Do you incorporate a discussion of both sample size and confounding factors? Use a full paragraph for each source of error.  | 6 |  |
| Do you briefly comment upon the three other factors (in other words, besides the factor you tested) that have an effect on the rate of an enzyme-catalyzed reaction? Do you briefly explain why these factors affect the reaction? | 3 |  |
| Do you include at least two specific questions that you would be interested to research, as an extension of what you have already researched in class?  | 2 |  |
| **Overall Report (4)** | Clarity, detail, focus, organization, etc. Also, at least **two original and informative diagrams** must be added into your report. | 4 |  |
|  |  | 50 |  |