

TxCETP Course Component: Alien Enzyme Function

This material is based on work supported by the National Science Foundation under Grant No. DUE 9987332.

III. Planning & Lab Report Form

Instructions:

Answer the following on separate pages. Be sure to complete the planning form and have your instructor approve of your design before proceeding to the experiment and report.

Planning Form:

1. How will you answer the proposed questions? (You will need to provide a general written overview followed by a graphical representation of the experiment.)
2. How will you know if you have determined the correct substrate, pH, and temperature for each of the unknown enzymes (be as specific as possible)? Some considerations follow:
 - What assumption(s) are you making?
 - What is your hypothesis? What is the alternative hypothesis?
 - What are your predictions?
 - What is/are the independent variable(s)? What are you manipulating?
 - What is/are the dependent variable(s)? What are you measuring?
 - What is/are the experimental group(s)?
 - What is/are the control group(s)?
3. Procedures:
 - Outline your procedures carefully and specifically, so that others could easily replicate your experiment.

Report:

1. Data Collected/Observations:
 - Describe your collected data (results), how you limited the bias, the equipment you used, and the duration of your sampling.
 - Organize your data into a legible form using graphs, tables, charts, etc. Be sure to write everyone's name on the page.
2. Data Analysis:
 - Describe how you analyzed your data (graphs, tables, charts, statistical tests, etc.).
 - What patterns or trends did you notice?
3. What are your Conclusions?
 - Summarize your conclusions based on your data.

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Summary Report:

The commanding officer in charge of the investigation demands that you report your findings in a form that he, a “non-scientist,” will understand. Summarize your findings in a report or presentation addressed to the non-scientist making sure to address his questions.

1. What the similarities of alien enzyme function and human enzyme function? What are the differences?
2. What are the optimum temperature, pH, and substrate for enzyme X and for enzyme Q?
3. What can you infer from your results regarding the alien's
 - diet and
 - digestive function?