

Manipulation of Enzymes and Enzymatic Processes

Abstract

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Although most often enzymes are thought to catalyze the breakdown of material in an organism (degradation), enzymes can also catalyze reactions that synthesize material, thus making them incredibly important for the study of essential mechanisms of life. In order to study how properties within a reaction affect the activity, two experiments were conducted to examine how enzyme concentration affects the rate of a reaction and also how reactant and product concentration can affect the direction of enzymatic reactions. Initially, to understand rates of reaction, an iodine test was completed on solutions containing the enzyme salivary amylase followed by the application of Benedict's Test. To understand how reactant and product concentrations affect the direction of an enzymatic reaction, the solutions containing the enzyme phosphorylase were treated with the same iodine and Benedict's tests. The outcomes supported existing theories that, in organic environments, higher concentrations of an enzyme increase the rate of a reaction. Similarly, a high concentration of reactants drives an enzymatic reaction forward; a high concentration of products drives the reverse reaction. Understanding of these processes is central to any study of biology because the thousands of enzymes that exist determine all the chemical reactions that can occur in cells.

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1

The first sentence presents the basic, theoretical background for the lab.

2

A second sentence highlights the lab's purpose.

3

The third and fourth sentences present the lab's objectives.

4

The fifth sentence presents the findings and their relationship to existing theories.

5

The last sentence clarifies the importance of the lab work.