

# Pdf free Biology lab 2 enzyme catalysis answers

## (2023)

paul andersen starts with a brief description of enzymes and substrates he then explains how you can measure the rate of an enzyme mediated reaction cata study with quizlet and memorize flashcards containing terms like the substrate for the reaction catalyzed by catechol oxidase is a catechol b amylase c maltose d benzoquinone in exercise 1 of today s lab 2 of the 4 experimental tubes are negative controls in other words no response is expected the enzyme used in this lab is catalase it has four polypeptide chains that are each composed of more than 500 amino acids one catalase function is to prevent the accumulation of toxic levels of hydrogen peroxide formed as a by product of metabolic processes enzymes accelerate the rate of chemical reactions by lowering the activation energy needed to trigger the reaction without enzymes chemical reactions would not occur fast enough to support life enzymes are typically proteins and each is composed of a specific sequence of amino acids this lab will observe the conversion of hydrogen peroxide to water and oxygen gas by the enzyme catalysis

the amount of oxygen generated will be measured and used to calculate the rate of the enzyme catalyzed reaction overview in this lab you will observe the conversion of hydrogen peroxide  $\text{H}_2\text{O}_2$  to water and oxygen gas by the enzyme catalase and measure the amount of oxygen generated and calculate the rate of the enzyme catalyzed reaction you will design a set of experiments to examine the effects of temperature pH and substrate concentration on the ability of enzymes to catalyze chemical reactions in particular you will be examining the effects of these environmental factors on the ability of catalase to convert  $\text{H}_2\text{O}_2$  into  $\text{H}_2\text{O}$  and  $\text{O}_2$  a substance that speeds up a chemical reaction without being a reactant is called a catalyst the catalysts for biochemical reactions that happen in living organisms are called enzymes enzymes are usually proteins though some ribonucleic acid rna molecules act as enzymes too lab 2 enzyme catalysis overview the information will assist teachers with aspects of lab 2 that are not necessarily addressed in the lab manual these suggestions are provided to enhance the students overall lab experience as well as their conceptual understanding addressing student misunderstandings enzymes are proteins that catalyze biochemical reactions by lowering the activation energy necessary to break the chemical bonds in reactants and form new chemical bonds in the products catalysts bring reactants closer together in the appropriate orientation and weaken bonds increasing the reaction rate name ap biology lab 2 enzyme catalysis overview in this lab you will 1 observe the conversion of hydrogen

peroxide  $\text{H}_2\text{O}_2$  to water and oxygen gas by the enzyme catalase and 2 calculate the rate of the enzyme catalyzed reaction start studying lab 2 enzymes learn vocabulary terms and more with flashcards games and other study tools study with quizlet and memorize flashcards containing terms like enzymes catalysts a small amount of enzyme can alter a relatively large small amount of substrate because and more teacher guide unit this lab fits in chapter 2 chemistry of life of freshman biology with enzyme activity overview in this lab students will use yeast as a source of catalase enzymes are biological catalysts and are usually proteins they greatly increase the rate of chemical reactions by lowering the activation energy which is the energy required to start a reaction the metabolism of a cell depends upon enzymes in order to function correctly paul andersen starts with a brief description of enzymes and substrates he then explains how you can measure the rate of an enzyme mediated reaction catalase from yeast is used to break hydrogen peroxide down into water and oxygen in this lab students will investigate a few of the different enzymes from our body you will learn how these enzymes work and how their activity is dependent on factors such as heat ph and concentration california science content standards 1 pre lab questions 3 points 1 point each 1 how could you test to see if an enzyme was completely saturated during an experiment not saturated when increasing the substrate concentration and the rate of reaction increases saturated rate of the reaction does not change with an increase of the substrate concentration

2 enzymes have a three dimensional shape due to the different levels of protein structure each protein has a primary secondary tertiary and quaternary structure that defines the unique configuration of each enzyme due to the shape of an enzyme only specific substrates can be catalyzed students learn about enzyme function enzyme specificity and the molecular basis of lactose intolerance through experiments with the enzyme lactase and analysis and discussion questions students engage in the scientific practices of designing and carrying out experiments and interpreting data

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paul andersen starts with a brief description of enzymes and substrates he then explains how you can measure the rate of an enzyme mediated reaction cata

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the enzyme used in this lab is catalase it has four polypeptide chains that are each composed of more than 500 amino acids one catalase function is to prevent the accumulation of toxic levels of hydrogen peroxide formed as a by product of metabolic processes

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enzymes accelerate the rate of chemical reactions by lowering the activation energy needed to trigger the reaction without enzymes chemical reactions would not occur fast enough to support life enzymes are typically proteins and each is composed of a specific sequence of amino acids

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this lab will observe the conversion of hydrogen peroxide to water and oxygen gas by the enzyme catalysis the amount of oxygen generated will be measured and used to calculate the rate of the enzyme catalized reaction

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overview in this lab you will observe the conversion of hydrogen peroxide  $\text{H}_2\text{O}_2$  to water and oxygen gas by the enzyme catalase and measure the amount of oxygen generated and calculate the rate of the enzyme catalyzed reaction

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you will design a set of experiments to examine the effects of temperature ph and substrate concentration on the ability of enzymes to catalyze chemical reactions in particular you will be examining the effects of these environmental factors on the ability of catalase to convert  $\text{H}_2\text{O}_2$  into  $\text{H}_2\text{O}$  and  $\text{O}_2$

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a substance that speeds up a chemical reaction without being a reactant is called a catalyst the catalysts for biochemical reactions that happen in living organisms are called enzymes enzymes are usually proteins though some ribonucleic acid rna molecules act as enzymes too



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lab 2 enzyme catalysis overview the information will assist teachers with aspects of lab 2 that are not necessarily addressed in the lab manual these suggestions are provided to enhance the students overall lab experience as well as their conceptual understanding addressing student misunderstandings

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name ap biology lab 2 enzyme catalysis overview in this lab you will 1 observe the conversion of hydrogen peroxide  $\text{H}_2\text{O}_2$  to water and oxygen gas by the enzyme catalase and 2 calculate the rate of the enzyme catalyzed reaction

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teacher guide unit this lab fits in chapter 2 chemistry of life of freshman biology with enzyme activity overview in this lab students will use yeast as a source of catalase

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enzymes are biological catalysts and are usually proteins they greatly increase the rate of chemical reactions by lowering the activation energy which is the energy required to start a reaction the metabolism of a cell depends upon enzymes in order to function correctly

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paul andersen starts with a brief description of enzymes and substrates he then explains how you can measure the rate of an enzyme mediated reaction catalase from yeast is used to break hydrogen peroxide down into water and oxygen

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in this lab students will investigate a few of the different enzymes from our body you will learn how these enzymes work and how their activity is dependent on factors such as heat ph and concentration california science content standards 1

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enzymes have a three dimensional shape due to the different levels of protein structure each protein has a primary secondary tertiary and quaternary structure that defines the unique configuration of each enzyme due to the shape of an enzyme only specific substrates can be catalyzed

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students learn about enzyme function enzyme specificity and the molecular basis of lactose intolerance through experiments with the enzyme lactase and analysis and discussion questions students engage in the scientific practices of designing and carrying out experiments and interpreting data

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