

Enzymes

Define a catalyst.

Enzymes

What are enzymes?

Enzymes

Why are enzymes important in living organisms?

Enzymes

What is the active site?

Enzymes

What happens to the enzyme after the products leave?

Enzymes **Supplement**

What is an enzyme-substrate complex?

Enzymes **Supplement**

What does it mean to say that enzymes are specific?

Enzymes **Supplement**

Why does rate increase as temperature rises to the optimum?

Proteins that are involved in all metabolic reactions, where they function as biological catalysts.

A substance that increases the rate of a chemical reaction and is not changed by the reaction.

The region of the enzyme where the substrate fits. Its shape is complementary to the substrate.

They make reactions fast enough to sustain life. Without them, reactions would be too slow.

The temporary structure formed when the substrate is bound to the active site.

It is unchanged, so it can be used again.

More kinetic energy, so more frequent effective collisions between substrate and active sites.

Each enzyme acts on one substrate because only that substrate has a shape complementary to the active site.

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What happens above the optimum temperature?

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How does a pH far from the optimum affect an enzyme?

Enzymes

Describe the effect of increasing temperature on enzyme activity.

Enzymes

Describe the effect of pH on enzyme activity.

Enzymes

What is denaturation?

Enzymes

Which indicator shows whether starch is present?

Enzymes

Which variables are controlled when investigating temperature?

It changes the shape of the active site, so there is no fit and the enzyme is denatured.

The active site changes shape, the substrate no longer fits, and the enzyme is denatured.

Activity is highest at the optimum pH. Above or below it, activity decreases; extreme pH denatures the enzyme.

Activity increases up to the optimum temperature, then decreases quickly as the enzyme is denatured.

Iodine solution: blue-black with starch, orange-brown when no starch is left.

A permanent change in the shape of an enzyme's active site, so the substrate no longer fits and the enzyme no longer works.

pH, and the volume and concentration of the enzyme and substrate.