

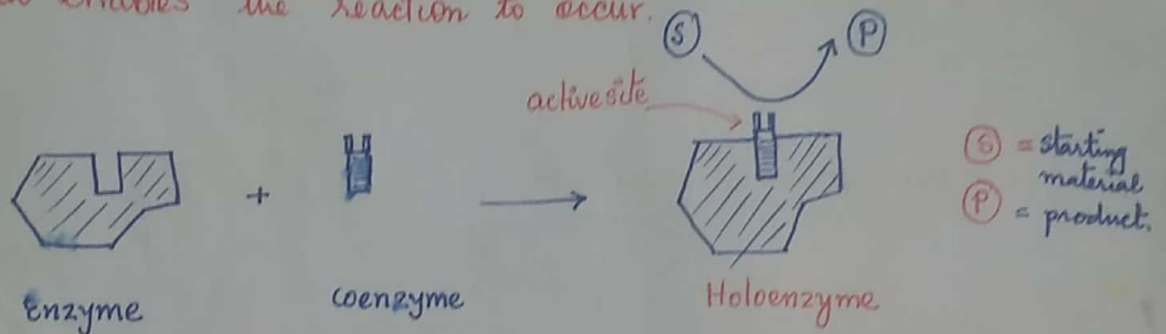
These sections are further subdivided by other features such as the substrate, products and reaction mechanism.

Hexokinase (EC 2.7.1.1) is a transferase (EC 2) that adds a phosphate group (EC 2.7) to a hexose sugar, a molecule containing an alcohol group (EC 2.7.1)

Coenzyme: an organic non-protein compound that binds with an enzyme to catalyze the reaction. It is necessary for the functioning of an enzyme. a coenzyme can not function alone, but can be used several times when paired with an enzyme.

Apoenzyme  $\Rightarrow$  an enzyme without a co-enzyme is called apoenzyme. Without coenzyme or cofactor an enzyme can not catalyze reactions effectively.

Holoenzyme: When an enzyme gains a coenzyme, it then becomes a holoenzyme or active enzyme. A coenzyme attach to the active site of the enzyme which enables the reaction to occur.



When an enzyme is denatured by extreme heat or ~~high~~ pH, the coenzyme can no longer attach to the active site. Coenzymes are vitamins, vitamin derivatives or form nucleotides.

Co-factors: are reusable non-protein molecules that do not contain carbon (inorganic). Usually cofactors are metal ions such as iron, zinc, cobalt, copper that loosely bind to the active site of an enzyme. They must also be supplemented in the diet as most organisms do not naturally synthesize metal ions.

Prosthetic groups: These can be organic vitamins, sugars, lipids or inorganic metal ions. However, unlike coenzymes or cofactors, these groups bind very tightly or covalently to an enzyme to aid catalysis. These groups are often used in cellular respiration and photosynthesis.