ENZYME TERMINOLOGY

activation energy The minimum energy that a reacting species must possess in order to reach the transition state and proceed to products.

transition state A high energy configuration that reacting species must pass through before converting to products.

cofactor Molecules or ions that are necessary for the catalytic action of enzymes. This includes metals or small organic molecules.

coenzyme Organic molecules necessary for the catalytic action of enzymes. Many are derivatives of vitamins.

prosthetic group A cofactor that is covalently linked to or very strongly associated with its enzyme.

apoprotein The polypeptide part of a protein with its cofactors absent.

holoprotein An active protein possessing all of its cofactors.

substrate The molecule on which an enzyme acts.

catalytic center (active site) The specific site on an enzyme where the substrate binds and catalysis occurs.

enzyme-substrate complex An enzyme molecule that has its substrate associated at the catalytic site.

allosteric modulator (allosteric effector) A molecule that binds to an enzyme at a site other than the catalytic center and regulates the activity of the enzyme by affecting its conformation.

inhibitor (negative modulator) A molecule that decreases the activity of an enzyme.

competitive inhibitor A molecule of similar structure to the substrate that competes with the substrate for binding at the catalytic center.

uncompetitive inhibitor A molecule that binds to an enzyme-substrate complex and decreases the activity of the enzyme.

noncompetitive inhibitor A molecule that binds to free enzyme or the enzyme-substrate complex and decreases the activity of the enzyme.

activator (positive modulator) A molecule that turns on or increases the activity of an enzyme.

regulatory center (allosteric site) A site on an enzyme, other than the catalytic center, where an allosteric modulator binds.

oligomer A protein that consists of several associated polypeptide chains.