

## Enzyme Classification and Naming

<b>Enzyme Class and Reaction*</b>	<b>Subclass or Common Name</b>	<b>Reaction*</b>
<b>Oxidoreductase</b> <i>Oxidation-reduction reaction</i>	Dehydrogenase	Transfer of a hydride ion
	Oxidase	O <sub>2</sub> is the electron acceptor
<b>Transferase</b> <i>Transfer of a functional group from one compound to another</i>	Kinase	Transfer of a phosphoryl group between a nucleotide (e.g. ATP) and another compound
	Aminotransferase (Transaminase)	Transfer of an amino group between compounds
<b>Hydrolase</b> <i>Hydrolysis reaction (cleavage of a single bond via addition of water)</i>	Phosphatase	Hydrolysis of a single bond between a compound and a phosphoryl group (releasing inorganic phosphate, Pi)
	Peptidase Protease Proteinase	Hydrolysis of a peptide bond
	Glycosidase	Hydrolysis of a glycosidic bond
	Lipase	Hydrolysis of a bond in a lipid
<b>Lyase</b> <i>Group elimination to form a double bond, or Breaking a single bond to form two products, one of which has a new double bond</i>	Synthase	Forming a single bond between two compounds, one of which loses a double bond
<b>Isomerase</b> <i>Internal rearrangement or isomerization</i>	Mutase	The apparent migration within a molecule of a functional group from one position to another position
<b>Ligase</b> <i>Bond formation coupled to nucleotide triphosphate (ex: ATP, GTP, ...) hydrolysis</i>	Synthetase	Formation of a new bond coupled to ATP (or GTP, etc.) hydrolysis

*\*Remember that enzymes catalyze a reaction in either direction. A reaction going in reverse (relative to the direction described) will also be catalyzed by an enzyme of that class.*