

- Malonylation
- Hydroxylation
- Iodination (e.g., of thyroglobulin)
- Nucleotide addition such as ADP-ribosylation
- Oxidation
- Phosphate ester (O-linked) or phosphoramidate (N-linked) formation
 - Phosphorylation: The addition of a phosphate group, usually to serine, threonine, and tyrosine (O-linked), or histidine (N-linked)
 - Adenylylation: The addition of an adenylyl moiety, usually to tyrosine (O-linked), or histidine and lysine (N-linked)
- Propionylation
- Pyroglutamate formation
- S-glutathionylation
- S-nitrosylation
- Succinylation: The addition of a succinyl group to lysine
- Sulfation: The addition of a sulfate group to a tyrosine
- PTMs involving nonenzymatic additions in vivo
 - Glycation: The addition of a sugar molecule to a protein without the controlling action of an enzyme
- PTMs involving nonenzymatic additions in vitro
 - Biotinylation: The acylation of conserved lysine residues with a biotin appendage
 - Pegylation
- PTMs involving the addition of other proteins or peptides
 - ISGylation: The covalent linkage to the ISG15 protein (ISG: interferon-stimulated gene)
 - SUMOylation: The covalent linkage to the SUMO protein (SUMO: small ubiquitin-related modifier)
 - Ubiquitination: The covalent linkage to the protein ubiquitin
 - Neddylation: The covalent linkage to neural precursor cell expressed, developmentally down-regulated protein (nedd)
 - Pupylation: The covalent linkage to the prokaryotic ubiquitin-like protein
- PTMs involving the changing of the chemical nature of amino acids
 - Citrullination or deimination: The conversion of arginine to citrulline
 - Deamidation: The conversion of glutamine to glutamic acid or asparagine to aspartic acid
 - Elimination: The conversion of an alkene by beta-elimination of phosphothreonine and phosphoserine, or dehydration of threonine and serine, as well as by decarboxylation of cysteine
 - Carbamylation: The conversion of lysine to homocitrulline
- PTMs involving structural changes